Waverunner Tech Tips

The following is a list of commands and errors for the Drive System:

CF Telling Compressor to start
CE Wait for tank pressure to come up
CD Hold body still
CC Move body to lower limit and hold
CB Move body to upper limit and hold
C9 Set the center of handle
C8 Set the Accel off position
C7 Set body to center position
E C ROM error
E 1 RAM error
E2 Rear centering error
E3 Front down limit error
E-4 Front up limit error
E5 Front volume error
E6 Low pressure from tank
E7 Compressor malfunction (Japaneese games only)

Whenever there is a drive malfunction always check the following first:

1) Tank is dry as well as water filters in motion base.
21 Line pressure from compressor is set to 90 psi.
3) Primary regulator in motion base is set to .6 mpa.
4) Secondary regulator to 3) above is set to .3 mpa.
51 There are no air leaks in system.
6) All connections from Drive bd to Valve Assy in motion base are connected and there are no broken or pinched wires.

These actions generally will handle most errors found in drive system.

Occasionally if the regulators are not set correctly, the Pitch and Roll cylinders can get unequal pressures in them, This will prevent them from full travel which especially with the Pitch cylinder and can cause E2-E5 errors. To correct this, turn the game power off disconnect the air from the machine. Then disconnect one at a time and reconnect the red, clear, black, and blue 10mm hoses at the valves that feed this cylinder. This will release the pressure from the cylinder. Watch your hands as you do this because the machine will move as the pressure is released. Now reconnect the air to the game. Next power up machine and watch screen for drive status as it goes through it's tests. The Roll cylinder usually won't give you trouble but if it does follow this same procedure with the exception of disconnecting the four 10mm hoses. There will be

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INTRODUCTION OF THE OWNERS MANUAL

SEGA ENTERPRISES, LTD., has for more than 30 years been supplying various innovative and popular amusement products to the world market. This Owners Manual is intended to provide detailed descriptions together with all the necessary installation, game settings and parts ordering information related to WAVERUNNER, a new SEGA product.

This manual is intended for those who have knowledge of electricity and technical expertise, especially in ICs, CRTs, microprocessors, and circuit boards. Read this manual carefully to acquire sufficient knowledge before working on the machine. Should there be a malfunction, non-technical personnel should under no circumstances touch the interior system. Should the need arise, contact our main office, or the closest branch office listed below.

SEGA ENTERPRISES, INC. (USA)
Customer Service
45133 Industrial Drive
Fremont, CA 94538
Phone415802-1750
F a x 415-802-1754
7:30 am ▪ 4:00 pm, Pacific Standard Time
Monday thru Friday

GAME REGISTRATION INFORMATION

Please take a moment to complete the following information about your new Sega game.
This information will be essential to you in the future, should you need to request parts or service information, or should you sell or transfer the machine.

Game Name:

Serial Number: _____
Date of purchase: _____

Distributor: _____
Salesperson: _____
Phone number: _____

Game moved or sold (date): _____

NOTES:

General Precautions

Follow instructions: All operating and use instructions should be followed.

Attachments: Do not use attachments not recommended by the product manufacturer as they may cause hazards.

Accessories: Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart. stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use only mounting accessories recommended by the manufacturer.

Moving the **Product:** This product should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product to overturn.

Ventilation: Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the product and to protect it from overheating; these openings must not be blocked or covered. The openings should never be blocked by placing the product in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

Power Sources: This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your location, consult your local power company. For products intended to operate from battery power or other sources, refer to the operating instructions.

Grounding or **Polarization:** This product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

Power Cord **Protection:** Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

Overloading: Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

Object and Liquid Entry: Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

Servicing: Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring Service: Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a) If the power cord or plug is damaged;
b) If liquid has been spilled, or objects have fallen into the product;
c) If the product has been exposed to rain or water;
d) If the product does not operate normally when following the operating instructions. Adjust only those controls that are explained in the operating instructions. An improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation;
e) If the product has been dropped or damaged in any way;
f) When the product exhibits a distinct change in performance; this indicates a need for service.

Replacement Parts: When replacement parts are required, be sure the service technician has used replacements parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire. electric shock, or other hazards.

Safety Check: Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

Heat: The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat

Lithium Battery- Dispose of batteries only in accordance with the battery manufacturer's recommendations. Do not dispose in an open flame condition, since the battery may explode.

Cleaning: When cleaning the monitor glass. use water or glass cleaner and a soft cloth. Do not apply chemicals such as benzine, thinner, etc.

Location: This an indoor game machine, DO NOT install it outside. To ensure proper usage. avoid installing indoors in the places mentioned below:

- Places subject to rain/water leakage, or condensation due to humidity:
- In close proximity to a potential wet area:
- Locations receiving direct sunlight;
- Places close to heating units or hot air;
- In the vicinity of highly inflammable/volatile chemicals or hazardous matter:
- On sloped surfaces;
- In the vicinity of emergency response facilities such as fire exits and fire extinguishers;
- Places subject to any type of violent impact;
- Dusty places.

INSTALLATION PRECAUTIONS

- Verify the amperage of the branch circuit outlet before plugging in the power plug. Do not overload the circuit.
- Avoid using an extension cord. If one is required, use an extension cord of type SJT, 1613 AWG rated min. 120 VAC. 7A.
- Moving this unit requires a minimum clearance (of doors, etc.) of 32" (W) by 77" (H).
- For the operation of this machine, secure a minimum area of 32" (W) by 42"(D).

REGULATORY APPROVALS

This game has been tested and found to comply with the Federal Communications Commission Rules.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This game has been tested and listed by Underwriters Laboratories, Inc., to ANSI/UL22.

LISTED

5K92

AMUSEMENT MACHINE

COMPRESSOR POWER REQUIREMENTS Current, 1117W (9.3A) 120V 60HZ

INSTALLATION ITEMS

The following items are included with your Wave Runner game. Make sure that these items are included whenever the game is moved or sold.

DESCRIPTION OWNERS MANUAL
Part No. (Qty.) 4201-6239-01 (1)
Note

Figures

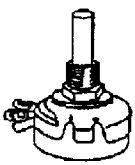
If Part No. has no description, the Number has not been registered or can not be registered. Such a part may not be obtainable even if the customer desires to purchase it. Therefore, ensure that the part is in safekeeping with you.

KEY MASTER
220-5381 (2)
For opening/closing the doors

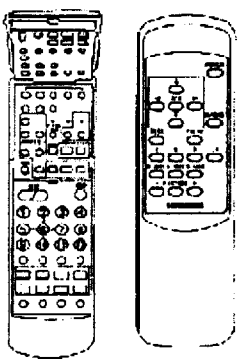
KEY
(2)
For the CASHBOX DOOR

SEAL TAPE
090-0037 (1)
Used for the maintenance of Air Drive, for air leakage prevention.

VOL. CONT B 5K OHM
220-5573 (2)
220-5484
For spare, refer to Section 12.



MITSUBISHI
Remote Control for Projector
Used for adjustment.
See Sec. 14.
200-5298(1) 200-5532(1)



ASSEMBLY AND PRECAUTIONS

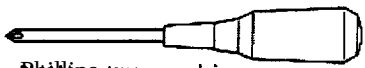
WARNING!

- Perform the assembly work following the procedure stated herein. Failure to comply with the instructions can cause an electric shock.
- Assembling should be performed as per this manual. This is a complex machine and erroneous assembly can cause electric shock or damage to the machine resulting in a malfunction.
- When assembling the machine, be sure that two or more persons are available to complete the work. Performing the work by a single person can cause personal injury or parts damage.

When carrying out the assembly work, follow the sequence outlined below.

1 ASSEMBLE THE PTV MONITOR
2 ASSEMBLE THE CABINET
3 SECURE IN PLACE (ADJUST LEG LEVELERS)
4 REMOVE SHIPPING BRACKET
5 POWER SUPPPLY
6 TURN POWER ON
7 ASSEMBLY CHECK

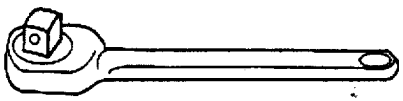
When assembling, make sure that the tools indicated below are readily available to you.



Phillips type screwdriver

master key

WRENCH (for M16 hexagon bolt),



Socket for M8 (width across flats: 13 mm)

SOCKET WRENCH

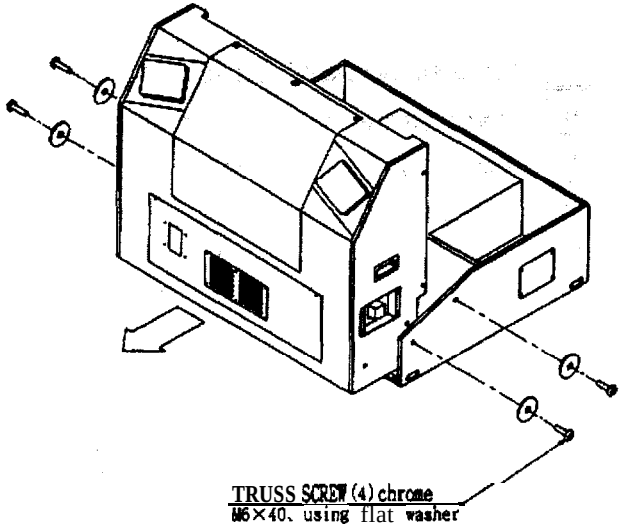
ASSEMBLING THE PTV

WARNING!

- Installing the billboard by one person is difficult. Be sure to use plural persons to perform the work safely and accurately.
- When mounting the PTV on the PTV base, be sure to have 4 or more persons available to perform the work. Executing the mounting by less than 4 persons can cause serious injury or damage.

CAUTION!

To perform work safely, be sure to prepare a secure and stable step. **Using an unstable step, or climbing on the machine to reach high places can cause severe injury and damage to the game machine.**



By using the specified screws, secure the 2 Mask Holders to the Projection Display ceiling. Insert the TV Mask from the underside as shown and secure with a total of 6 screws. 2 Side Brackets to the front of Projection Display in the installation direction shown with 2 screws for each. While supporting the Billboard by 2 persons, another person using the step is to insert the Billboard Connector into the Terminal Board of Projection Display ceiling. Insert the Billboard from the front as shown and secure with 2 screws.

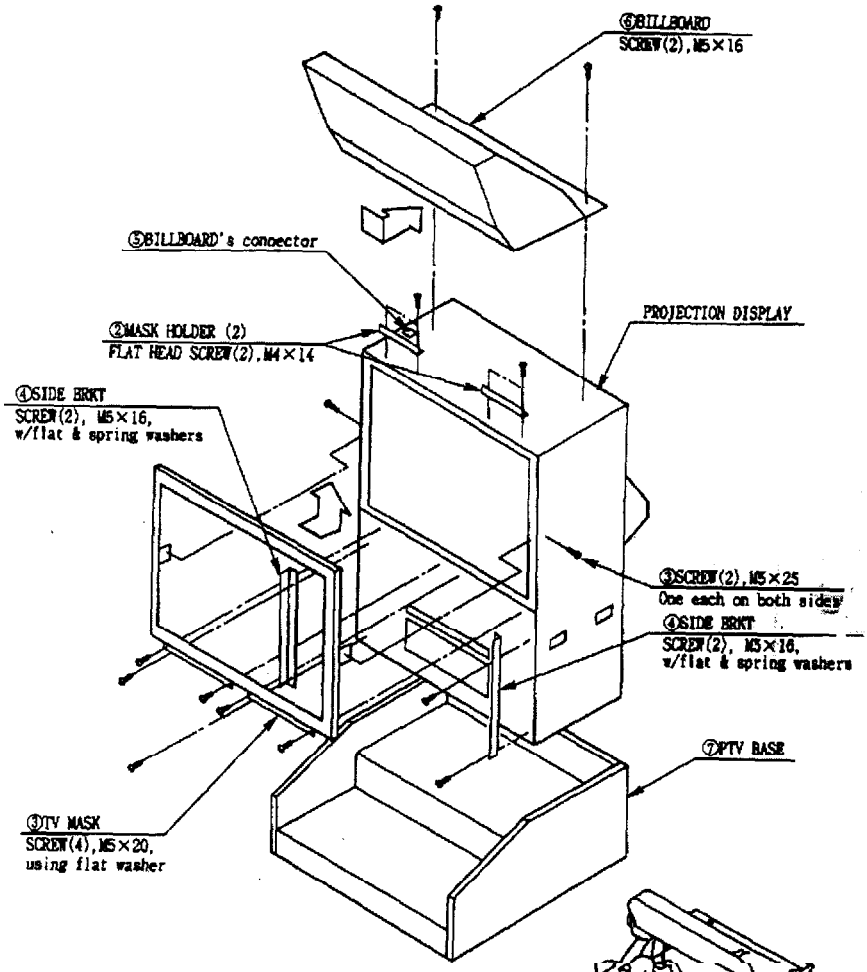
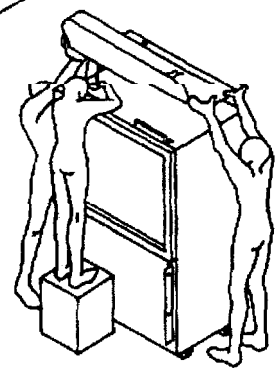


FIG. 6. 1b



CONTROL PANEL

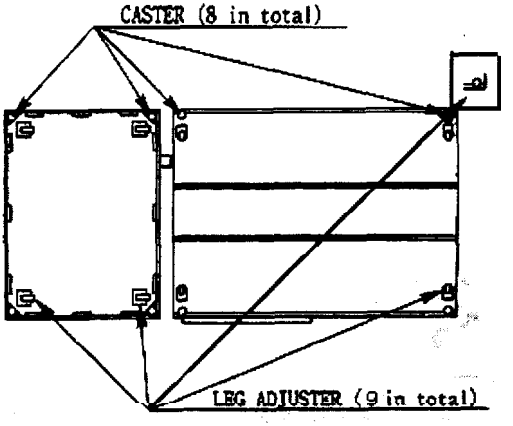
SECURING IN PLACE (LEG ADJUSTERS)

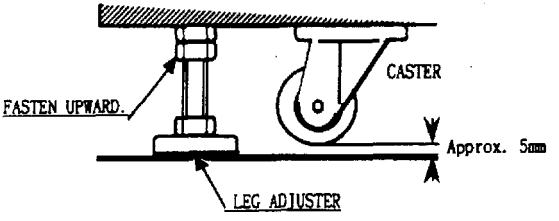
This machine has 8 casters (4 for the PTV base, 4 for the Rear Cabinet) and 9 leg adjusters (4 for the PTV base, 4 for the Rear Cabinet, and 1 for the cash box tower). When the installation position is determined, cause the leg adjusters to come into contact with the floor directly, make adjustments in a manner so that the casters will be raised approximately Smm. from the floor and make sure that the machine position is level.

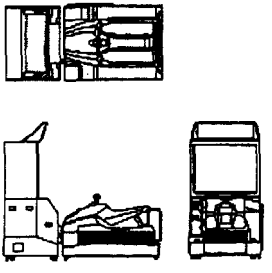
Move the machine to the installation position. When installing the machine against or close to a wall, be sure to secure passage space to enable the payer to get in the machine.

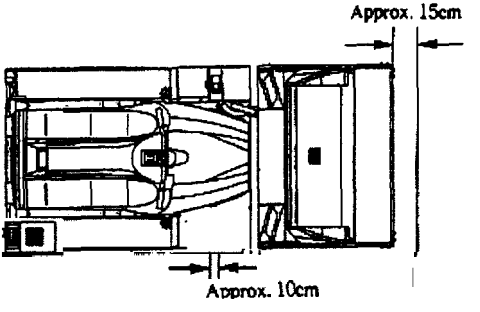
Cause all of the leg adjusters to make contact with the floor. By using a wrench, make adjustments in the height of the leg adjusters to ensure that the machine's position is level.

After making adjustments, fasten the leg adjuster nut upward and secure the height of the leg adjuster.

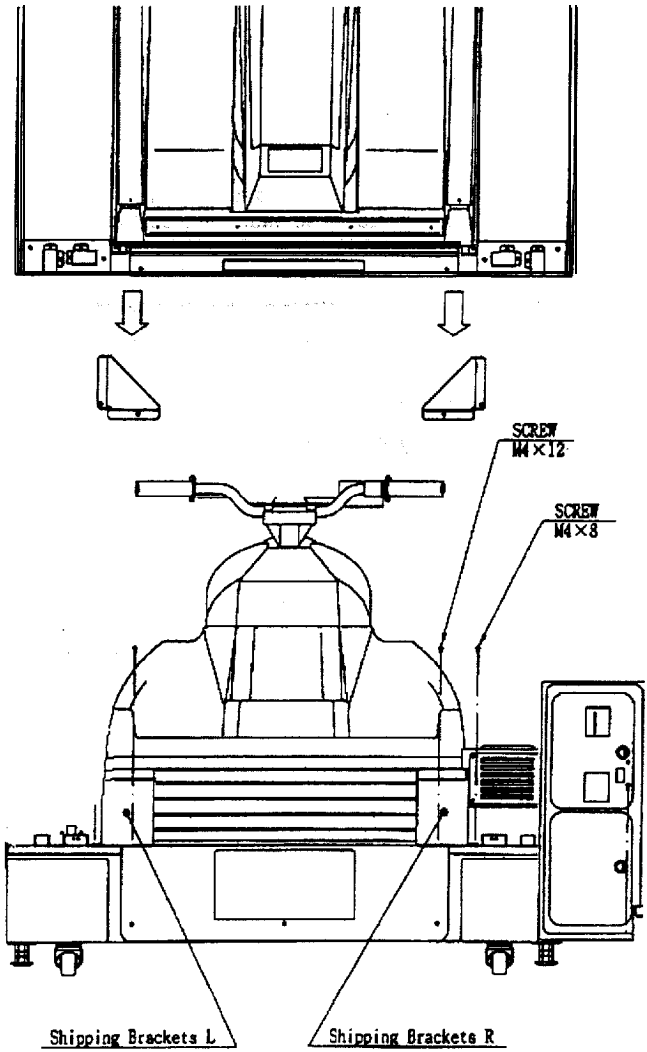








REMOVE THE SHIPPING BRACKET



POWER ON

WARNING!

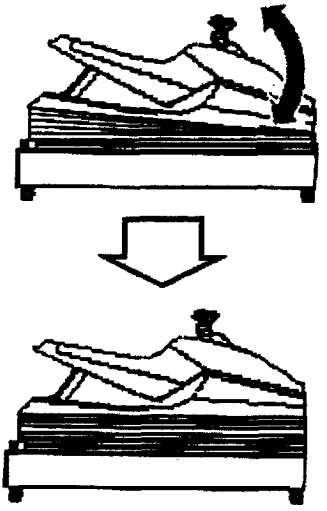
- When the power is first turned on, the ride moves. To prevent injury, first check for safety in the periphery of the ride, and then turn power on.
- If ERROR is displayed in the Advertise mode, do not operate the machine. Operating the machine when ERROR is displayed can cause a serious safety hazard.

CAUTION!

During intitialization settings, do not touch the ride portion. Wait until the intialization settings finish automatically. Touching the ride during initialization settings can cause inaccurate settings.

Turn the AC Unit Main SW ON to turn on the machine's power supply. At the same time the power is turned on for the power supply, the machine starts the initialization setting movements and displays the screen on which the setting is being made. Do not touch the Ride until the initialization setting movements are automatically finished.

Approximately 5 seconds after the power is turned on, the compressor starts to operate. If the pressure inside the tank is insufficient, it takes several minutes to attain the preset pressure. At the time of installation assembly, it takes approximately 3 minutes. When operation is being continued, it takes approximately one and half minutes due to the prestress.



The ride portion secures the left/ right inclination to the center.

The front of the ride portion lowers.

The front of the ride portion is raised.

The front of the ride portion moves to the intermediate position in the up/down movement.

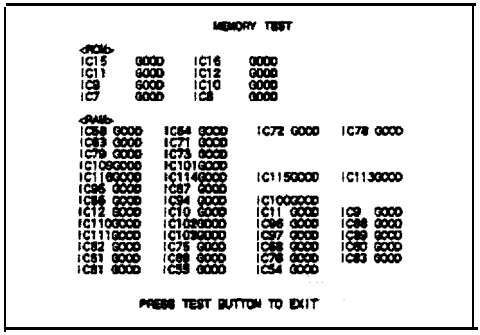
The front of the ride portion lowers.

The compressor stops.

After finishing the initialization setting movements, the ADVERTISE mode returns. During the setting movements, if any irregularity, malfunctioning, etc. of the moving mechanism are found, ERROR display is shown on the lower part of the ADVERTISE mode screen. In this case, the machine will not operate satisfactorily. Please contact the Distributor, etc. where this product was purchased from. In the case where several machines are connected, network check is performed after initialization settings are finished, and the screen displays to the effect that the check is being conducted. After checking, the ADVERTISE mode returns. Normally the network checking takes l-3 minutes. If there is any irregularity in the communication connection, check screen display will continue.

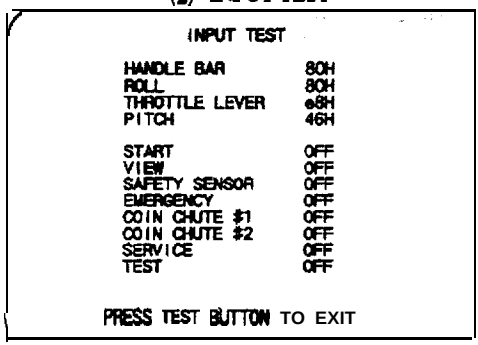
In the TEST MODE, ascertain that the assembly has been made correctly and IC BD. is satisfactory . In the test mode, perform the following test:

(1) MEMORY TEST


MEMORY TEST
<ROM>
IC15 GOOD IC16 GOOD
IC11 GOOD IC12 GOOD
IC9 GOOD IC10 GOOD
IC7 GOOD IC8 GOOD
<RAM>
IC56 GOOD IC64 GOOD IC72 GOOD IC78 GOOD
IC63 GOOD IC71 GOOD
IC70 GOOD IC73 GOOD
IC1090000 IC1010000
IC1160000 IC1140000 IC1150000 IC1130000
IC95 GOOD IC87 GOOD
IC96 GOOD IC94 GOOD IC1000000
IC12 GOOD IC10 GOOD IC11 GOOD IC9 GOOD
IC1100000 IC1080000 IC96 GOOD IC88 GOOD
IC1110000 IC1090000 IC97 GOOD IC89 GOOD
IC82 GOOD IC75 GOOD IC88 GOOD IC80 GOOD
IC81 GOOD IC88 GOOD IC76 GOOD IC83 GOOD
IC81 GOOD IC85 GOOD IC84 GOOD
PRESS TEST BUTTON TO EXIT

Selecting the MEMORY TEST on the test mode menu screen causes the on-board memory to be tested automatically. The game board is satisfactory if the display beside each IC No. shows GOOD.

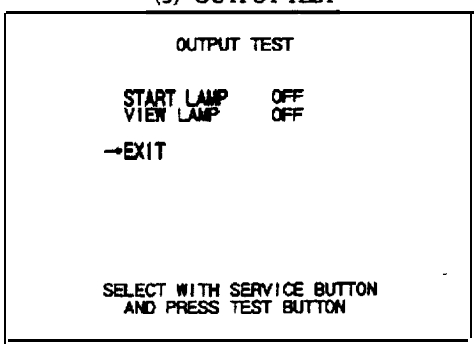
(2) INPUT TEST



Selecting the INPUT TEST on the test mode menu screen causes the screen (on which each switch and V. R. are tested) to be displayed. Press each switch. For the coin switch test, insert a coin from the coin inlet with the coin chute door open. If the display beside each switch indicates "ON," the switch and wiring connections are satisfactoly.

Check the display of each V.R. value. If the V. R. is malfunctioning, refer to the VR setting section of this manual.

(3) OUTPUT TEST

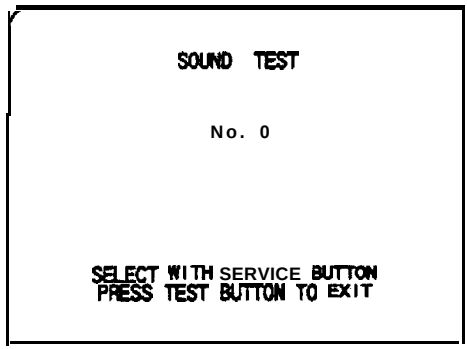


In the output test mode, carry out lamp test to ascertain that each lamp lights up satisfactorily.

(4) SOUND TEST

In the TEST mode, selecting SOUND TEST causes the screen (on which sound related BD and wiring connections are tested) to be displayed.

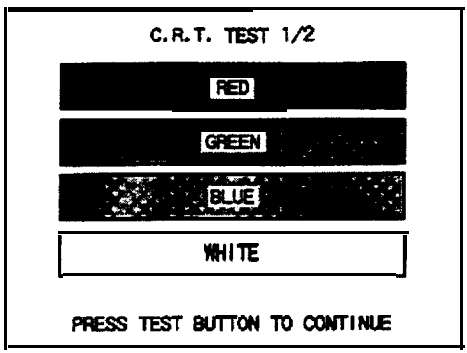
Be sure to check if the sound is satisfactorily emitted from each speaker and the sound volume is appropriate.

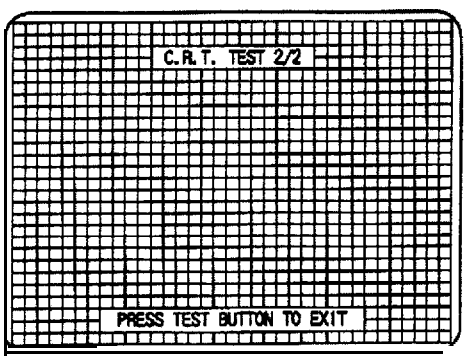


(5) C.RT. TEST

In the TEST mode menu, selecting C.R.T. TEST allows the screen (on which the projector is tested) to be displayed. Although the projector adjustments have been made at the time of shipment from the factory, color deviation, etc., may occur due to the effect caused by geomagnetism, the location building's steel frames and other game machines in the periphery. By watching the test mode screen, make judgment as to whether an adjustment is needed. If it is necessary, adjust the projector by referring to the appropriate section of this manual.

Perform all of the above tests at the time of monthly inspection.

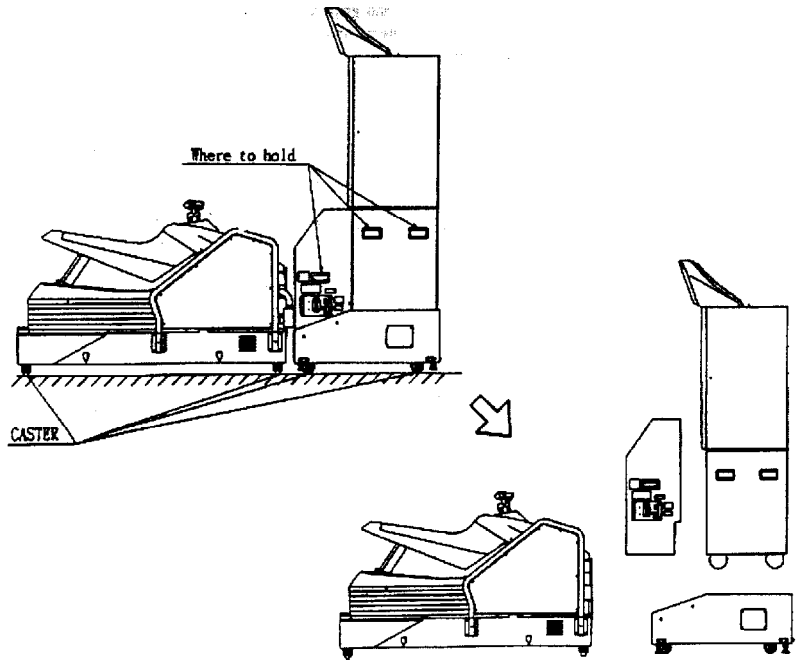




PRECAUTIONS TO BE HEEDED WHEN MOVING THE MACHINE

WARNING!

- When moving the machine, be sure to pull out the plug from the power supply. Moving the machine with the plug as is inserted can cause the power cord to be damaged, resulting in a fire and or electric shock.
- When moving the machine on the floor, retract the Leg Adjusters and ensure that Casters make contact with the floor. During transportation, pay careful attention so that Casters do not tread power cords and earth wires. Damaging the power cords can cause an electric shock and or short circuit.
- In places where step-like grade differences exist, be sure to separate the PTV, PTV Base, and the Cabinet. Inclining the PTV as is mounted on the PTV Base can cause the PTV to fall off from the Base and result in injury.
- When lifting the cabinet, be sure to hold the catch portions or bottom part. Lifting the cabinet by holding other portions can damage parts and installation portions due to the empty weight of the cabinet, and cause personal injury.
- When moving the PTV, do not push it from the rear side. Push it from sideways. Pushing the PTV from the rear side can have the PTV fall down, causing personal injury etc. In case the floor has slanted surfaces or step-like differences, be sure to move the machine by 2 or more persons.



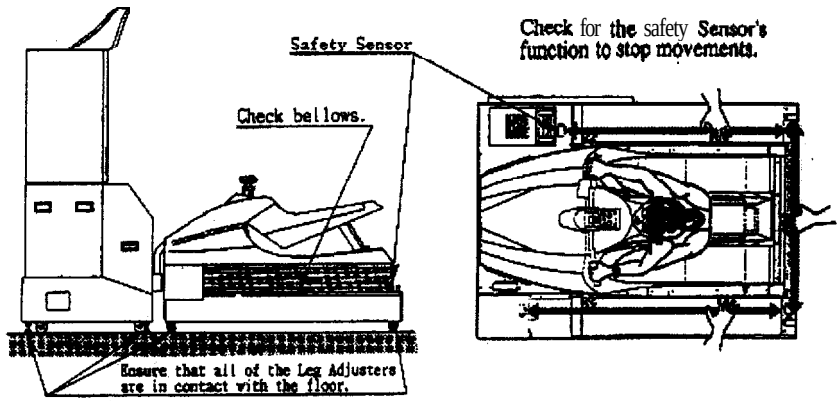
OPERATION

The seat portion of this product moves during game play. In order to prevent accidents, be sure to comply with the following points before and during operation.

WARNING!

In order to prevent accidents; cheek the following before starting operation of the game:

- Check to be sure that all the leg levelers are in contact with the floor. If they are not, the cabinet can move and cause an accident.
- Check to see if the bottom bellows are damaged or omitted. Bellows are important hazard-prevention parts. Irregular bellows can cause injury.
- Before commencing operation, execute test run to check if the safety sensors and emergency stop switch are functioning correctly to stop the machine movements during the game. The safety sensor and emergency stop switch are important hazard-prevention parts.


Safety Sensor
Check for the safety Sensor's function to stop movements.
Check bellows.
Ensure that all of the Leg Adjusters are in contact with the floor.

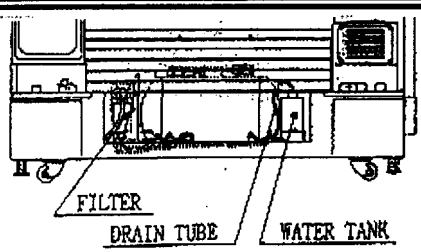
Do not place any heavy items on the product. Placing any heavy item on the product can cause an accident or parts damage.
Do not climb on the product. Climbing on the product can cause accident and injury. To inspect the top portion of the game, use a suitable step.

CAUTION!

To avoid injury, be sure to provide sufficient space for installation. Consider the potential for a crowded situation at the installation location. Insufficient installation space can cause players or bystanders to be hit by moving parts causing injury.

STOP
IMPORTANT!

Be sure to periodically dewater the Air Drive and dispose of the drain water. Excessive water gathered can cause a malfunction of the Air Drive system.



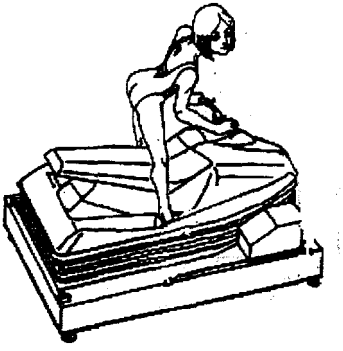
PRECAUTIONS TO BE HEEDED DURING OPERATION

To avoid injury and accidents, be sure to constantly give careful attention to the behavior of the visitors and players.

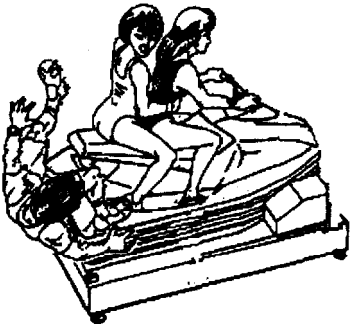
To avoid injury and accidents, those-who fall under the following categories are not allowed to play the game:

Intoxicated persons.
Pregnant women.
Those who need assistance while walking.
Those with high blood pressure or a heart condition.
Those persons who have had epilepsy, or experienced any instance of muscle convulsion or loss of consciousness when exposed to intensive light stimulus, video games or television.
Persons susceptible to motion sickness.
Anyone who does not comply with the warning displays and cautions for the machine.

Persons whose feet can not easily touch the base can fall down and be injured. Such persons should not play the game.

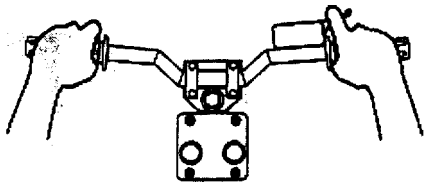


To avoid injury and parts damage, instruct players that only two persons at a time are allowed to ride.

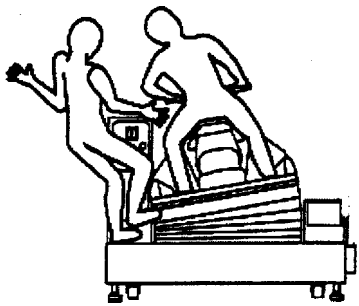


To avoid injury or electric shock, be sure that players do not place heavy objects or drinks on the base of the product.

Instruct players to keep a firm hold on the handle grips during play. This machine reacts as per the contents of the game. To avoid injury, players should refrain from using a single-handed grip on the bar.

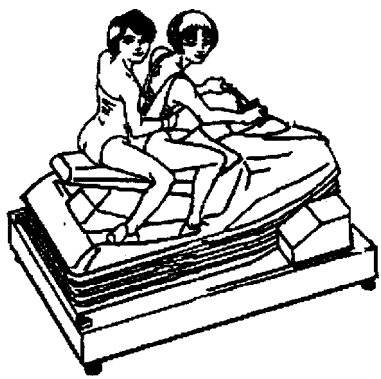


To avoid injury and accidents as a result of persons coming in contact with each other, instruct persons other than the players to keep away from the mechanism base. The safety sensor functions to stop only the machine movement. The ride can still be moved manually



When riding in tandem, firmly hold onto the front player. To avoid injury, do not stand while riding.

Immediately stop such acts as hitting or kicking the game. Such violent acts can cause damage to parts as well as injury due to fragments being dislodged or falling down.



HOW TO PLAY

The following explanations apply to the case the product is functioning satisfactorily. Should there be any moves different from the following contents, some sort of faults may have occurred. Immediately look into the cause of the fault and eliminate the cause thereof to ensure satisfactory operation.

HOW TO PLAY

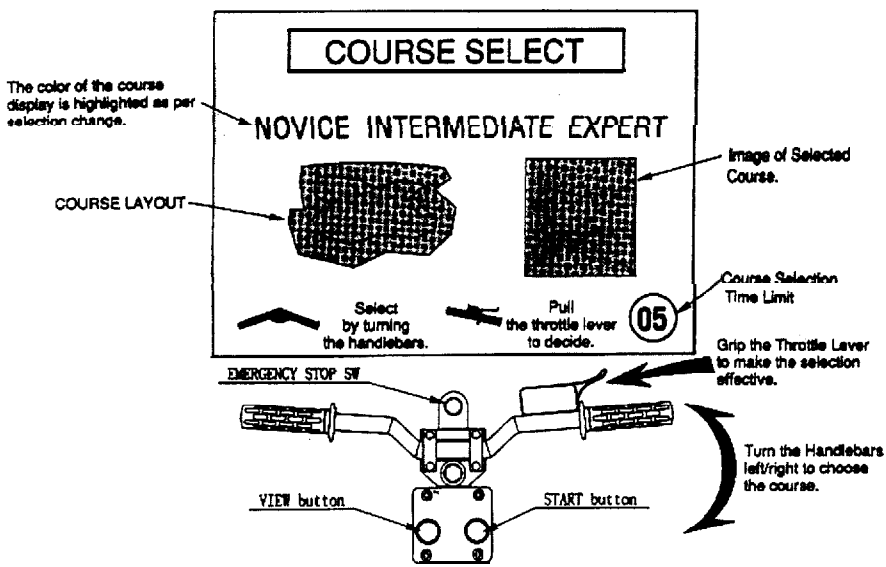
Herein, explanations are given for using the machine independently. In case of interactive Communication play, how to start, etc. differ from the following descriptions (Note 1).

Climb astride the game.

The Coin Chute Tower is located at the rear of the machine. As you climb astride, insert a coin(s). Inserting one play worth of coin(s) will have the how-to operate explanation screen appear. When this screen appears, the credit display will not be shown.

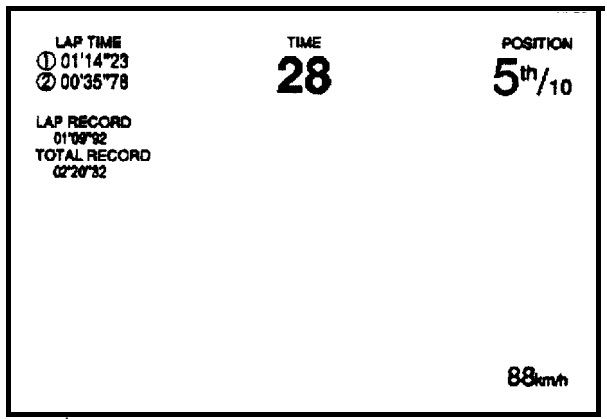
When Time Count on the how-to-operate explanation screen becomes 0, or the how-to-operate explanation screen is skipped by pressing the Start button, the Course Select screen will be displayed.

Choose one from among the 3 courses. The upper part of the screen displays NOVICE, INTERMEDIATE, and EXPERT. The color of the present selection display is highlighted. In the center of the screen, the layout of the presently selected course is displayed. Choose the desired course by turning the Handlebars and grip the Throttle Lever to make the selection effective. At this time, selection is not determined by keeping the Throttle lever as is gripped. After gripping, the Throttle Lever should be returned to the original position. Be careful of this point (Note 2).


COURSE SELECT
The color of the course display is highlighted as per selection change.
NOVICE INTERMEDIATE EXPERT
Image of Selected Course.
COURSE LAYOUT
Course Selection Time Limit
Select by turning the handlebars.
Pull the throttle lever to decide.
05
Grip the Throttle Lever to make the selection effective.
EMERGENCY STOP SW
Turn the Handlebars left/right to choose the course.
VIEW button
START button

After the course is selected, the game starts and at the same time, the ride portion starts moving due to the player's operation. etc. (Note 3).

On the game mode screen, the player's position is displayed on the upper right-hand side, Time Limit is shown at the upper center, Lap Time, the course's best lap time & best total time are indicated on the upper left-hand portion. On the lower right-hand side, tachometer and speedometer are displayed. On the lower left-hand side, the course map is shown.



t
The Course map shows the player's present position.

t
Tachometer & Speed meter.

When the game starts, Time Limit countdown starts. Passing the on-course checkpoint before the remaining time becomes 0 allows the game to be continued with the previous remaining time added to the Time Limit covering up to the next checkpoint. Failing to pass the checkpoint within the Time Limit results in game over.

The game ends when 2 laps are finished in any of NOVICE, INTERMEDIATE, and EXPERT courses (Note 4).

There are 3 kinds of operation methods that can be used during the game, i. e., Throttle Lever, Handlebars, and Shift of the player's weight (the ride portion's left/right banking). Gripping the Throttle Lever accelerates the speed. Turn the Handlebars left/right to turn left/right. To turn quickly, shift the player's weight in the same direction as the Handlebars turn, with the Handlebars as is turned. The machine cannot turn only by shifting the player's weight without turning the Handlebars. Use the View button to alternate perspectives to and from the Rider's view and View from behind.

The player with best results can register his name. Turn the Handlebars left/right to select characters and make the selection effective by gripping the Throttle Lever. At this time, be sure to return the Lever to the original position after gripping. The registered name is displayed during the ADVERTISE mode.

After finishing the game. the Ride portion returns to the centering position and stops.

After the end of one game, when the number of credits needed for game play are available, how-to-play explanation screen is displayed.

Note 1: If plural machines are linked for communication play, wait for other player's entry in the course selection mode. When all of the players choose the course after entry, the race course is determined by majority. In case of a tie, the course selected by a player first will be determined.
Note 2: The selection can be made effective by gripping the Throttle Lever or pressing the Start button.
Note 3: When the safety sensor detects an item on the Mechanism Base, the ride movement stops even during the game in order to prevent an accident. The ride can also be stopped by pressing the Emergency Stop SW. In this case, however, compressor movement stops, but the ride can be inclined by shifting the player's weight.
Note 4: The settings of the number of laps can be varied.

EXPLANATION OF TEST AND DATA DISPLAYS

By operating the switch unit, periodically perform the tests and data checks. When intially installing the unit, or collecting cash, or when the machine does not function properly, perform checking in accordance with the the explanations given in this section. The chart below shows the tests and modes that should be used as applicable.

STOP
IMPORTANT!

CAUTIONS TO BE HEEDED WHEN USING THE TEST MODE
In the case where multiple units are linked for communication play, exiting the test mode causes the unit to perform the network automatically. During this time, all of the units linked will not allow the game to be played in the normal status. Therefore, be sure not to enter the test mode if any one of the units is in play.

ITEMS	DESCRIPTION
INSTALLATION OF MACHINE	When the machine is installed, perform the following: 1. Check to see that each setting is per standard setting made at the time of shipment. 2. In the Input Test, check each Switch and VR. 3. In the Output Test, check each of the lamps. 4. In the Self-test, check the ICs on the IC board.
MEMORY	Choose Memory test in the Menu mode to allow the Memory test to be performed. In this test, Program RAMS, ROMs, and ICs are checked.
MONTHLY SERVICING	Monthly, perform the following: 1. Memory test. 2. Ascertain each setting. 3. Perform Input test. 4. Perform Output test.
CONTROL SYSTEM	1. In the Input test, check each switch and VR. 2. Adjust or replace each switch or VR. 3. If the problem can not yet be solved, check the control movements.
MONITOR	In the monitor adjustments mode, check to see if the projector is adjusted appropriately.
:C BOARD	1. Memory test 2. In sound test mode, check the sound related ROMs.
DATA CHECK	Check such data as game play time and histogram to adjust the difficulty level, etc.

SWITCH UNIT AND COIN METER

WARNING!

Do not touch place other than those specified. Touching places not specified can cause electric shock or short circuit accidents.

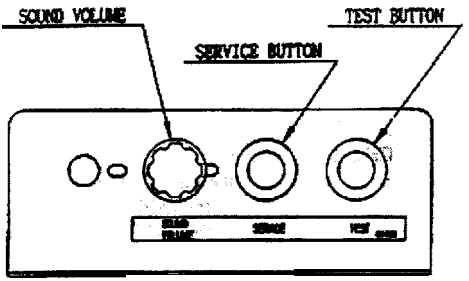
IMPORTANT!

- Adjust the optimum sound volume while taking in to consideration the environmental requirements of the location.
- If the Coin Meter and game board are electrically disconnected, game play is not possible.

SWITCH UNIT

Open the coin chute door, and the switch unit shown will appear. The functions of each switch are as follows:

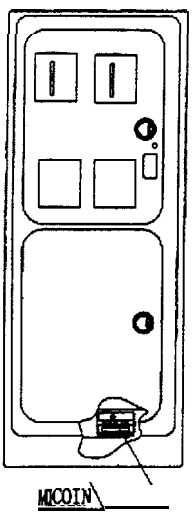
TEST BUT-TON:
For the function of the test button, see the following pages.
SERVICE BUTTON:
Gives credits without registering on the coin meter.
SOUND VOLUME:
Adjust the speaker volume.



SWITCH UNIT

COIN METER

Open the cashbox door with the exclusively used key and the coin meter will appear underneath the cashbox.



COIN METER

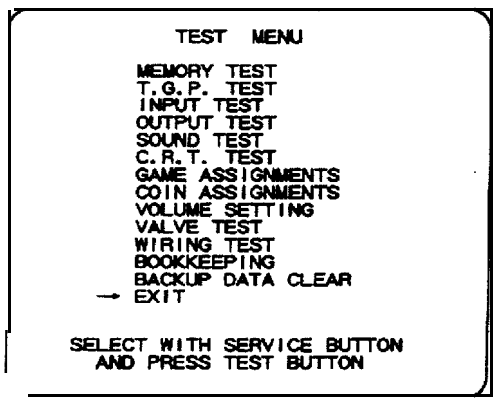
TEST MODE

The Test Menu allows the functioning of each part of the Cabinet to be checked, the monitor to be adjusted, and the coins and game related various settings to be performed.

Press the TEST BUTTON to cause the following Test Menu to be displayed on the monitor.

Press the SERVICE BUTTON until the pointer " -->" is moved to the desired item to make a selection.
Bring the pointer " -->" to the desired item and press either the TEST BUTTON to enter the selected item's test.
In the Test mode, the Start button instead of Test button and the View button instead of Service button can be used. These, however, can not be used in the INPUT TEST.

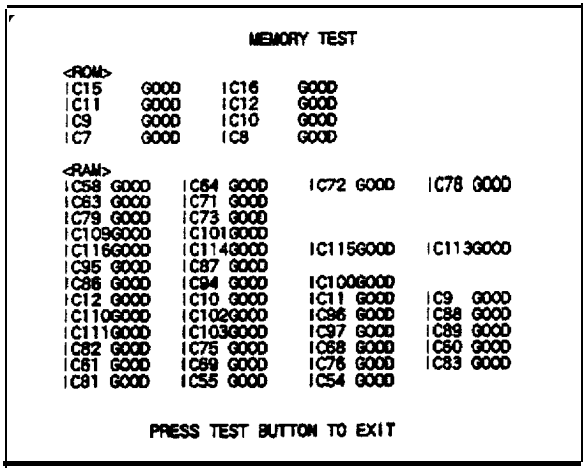
After the test is complete, move " > " to "EXIT" and press the TEST BUTTON to return to the Game Mode.



TEST MENU

MEMORY TEST

The MEMORY TEST mode is for checking the on-BD memory IC functioning. "GOOD" is displayed for normal ICs and "BAD" is displayed for abnormal ICs.


MEMORY TEST
<ROM>
IC15 GOOD IC16 GOOD
IC11 GOOD IC12 GOOD
IC9 GOOD IC10 GOOD
IC7 GOOD IC8 GOOD
<RAM>
IC58 GOOD IC64 GOOD IC72 GOOD IC78 GOOD
IC63 GOOD IC71 GOOD
IC79 GOOD IC73 GOOD
IC109GOOD IC101GOOD
IC116GOOD IC114GOOD IC115GOOD IC113GOOD
IC95 GOOD IC87 GOOD
IC86 GOOD IC94 GOOD IC100GOOD
IC12 GOOD IC10 GOOD IC11 GOOD IC9 GOOD
IC110GOOD IC102GOOD IC96 GOOD IC88 GOOD
IC111GOOD IC103GOOD IC97 GOOD IC89 GOOD
IC82 GOOD IC75 GOOD IC68 GOOD IC50 GOOD
IC61 GOOD IC69 GOOD IC76 GOOD IC83 GOOD
IC81 GOOD IC55 GOOD IC54 GOOD
PRESS TEST BUTTON TO EXIT

When the test is completed, if the results are shown as above, it is satisfactory.

It takes approximately 160 seconds to complete the test. If the TEST exceeds 160 seconds, the board may have malfunctioned.

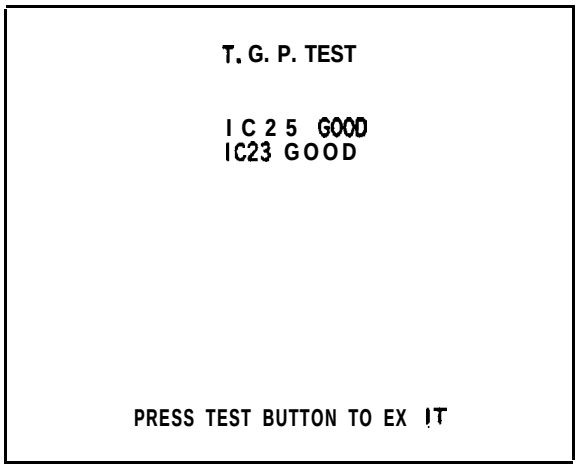
After finishing the test, press the TEST BUTTON to return to MENU mode.

T.G.P. TEST

Selecting T.G.P. TEST causes the functioning of the on-IC-BD T.G.P. (screen display related IC's) to be checked automatically. If the IC is satisfactory, "GOOD" will be indicated and if the IC is not satisfactory, "BAD" will be displayed.

After the test is finished, if the above are indicated, it is satisfactory.

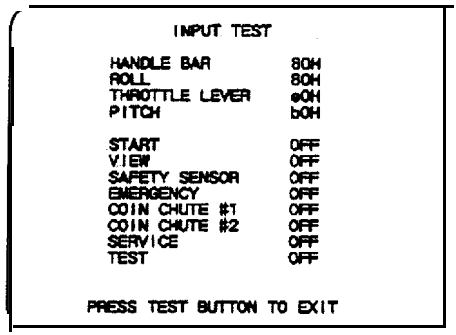
After finishing the test, press the Test button to return to the Menu screen.



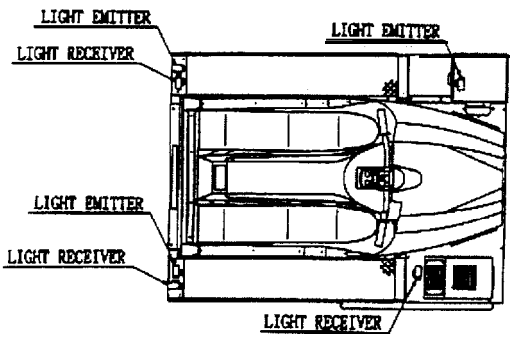
INPUT TEST

When INPUT TEST is selected, the following screen appears on the monitor. The screen allows the status of each SW and the value of each V.R. of the cabinet to be viewed. On this screen, periodically check the status of each switch & V.R.

By pressing each switch, if the display on the right-hand side of the name of each switch changes from OFF to ON, the SW and the wiring connections are satisfactory. To check Coin Chute Coin SW, open the Coin Chute Door and insert a coin(s) in the slot. When checking the SAFETY SENSOR, be sure to intercept the 3 Sensors on the step. Press the Test button, or simultaneously press the Start button and View button to have the Menu mode return.



INPUT TEST



The standard values for adjusting each VR are as follows.
In this product, the item of volume setting allows VR values except for pitch to be set.

WANDLE BAR: 80H±9
(centering position)

ROLL: 80H±9
(centering position)

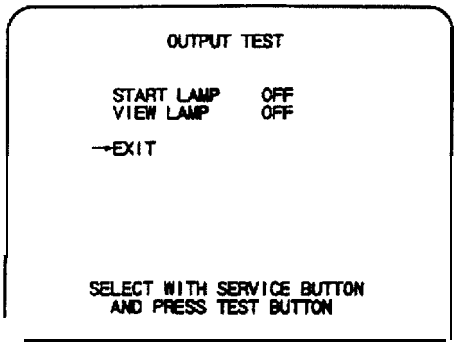
THROTTLE LEVER: e0H±9
(lever released)

PITCH: Over 70H - Under e0H

(When the Ride is lowered) (When the Ride is raised)

OUTPUT TEST

The OUTPUT TEST allows the function of each lamp to be checked.



Press the Service button to bring the arrow to the lamp item to be tested.

Pressing the Test button causes "ON" to be displayed and the corresponding lamp lights up. Pressing the Test button again causes "OFF" to be displayed and the lamp goes off.

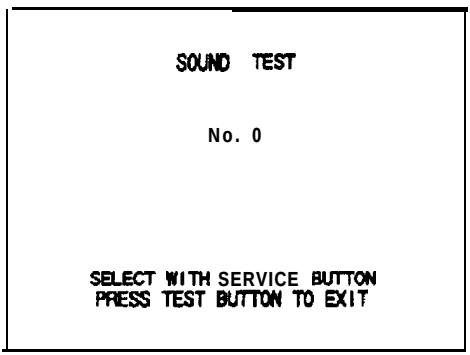
Move the arrow to EXIT and press the Test button to have the menu mode return on the screen.

SOUND TEST

This test mode allows the sound related boards and speakers to be checked.

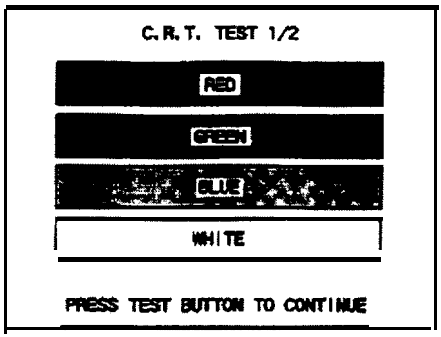
Press the Service button to have the sound vary.

Press the Test button to have the Menu mode return on the screen.



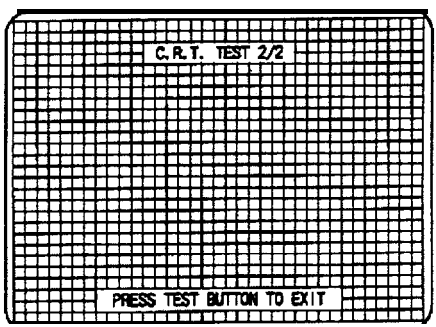
CRT TEST

Choose CRT test to have the monitor adjustment screen appear. By watching the screen, check to see if adjustments are needed.
For the adjustment method, refer to the Projector section of this manual.



C.R.T. TEST (1/2)

In the screen above, check monitor color adjustments. By watching the screen, make color adjustment. Each of the color bars is darkest at the left hand end and becomes brighter at the right hand end.
Press the test button to have the crosshatch screen below appear. In the screen, check monitor size and position adjustments. Check to be sure that the crosshatch lines do not go beyond the screen size and distortion does not occur.



C.R.T. TEST (2/2)

Press the Test button to return to the menu screen.

GAME ASSIGNMENTS

Selecting the GAME ASSIGNMENTS in the menu mode causes the present game setting to be displayed and also the game setting changes can be made. Each item displays the following content.

GAME DIFFICULTY	The game difficulty can be differentiated by varying TIME at the time of starting the race and TIME at the time of passing the checkpoint. Choose one from among 5 categories, i. e., VERY EASY, EASY, NORMAL, HARD, and HARDEST. Normally, the difficulty is set to NORMAL.
RACE MODE	There are 2 categories, i. e., NORMAL and LONG. The number of laps can be changed. Normally, this is set to NORMAL.
HANDICAP	In the communication vs. play, this sets whether correction should be made so that player cars in the second or lower positions increase the speed. Correction is used with ON and use of correction is cancelled with OFF.
ADVERTISE SOUND	Set this to ON to have sound produced during Demo mode and to OFF for not producing sound.
COUNTRY	Message Language (select USA for the U.S.A., and EXPORT for other countries.)
NETWORK TYPE	There are 3 categories, i., e., STAND ALONE, MASTER, and SLAVE. For one player play, choose STAND ALONE. For communication (interactive) play, set one seat to MASTER and all others to SLAVE.
CABINET ID	When linked for communication play, allocate the numbers sequentially in order starting from the leftmost end.

For Communication play, refer to COMMUNICATION PLAY section.

COIN ASSIGNMENTS

Setting Change Procedure

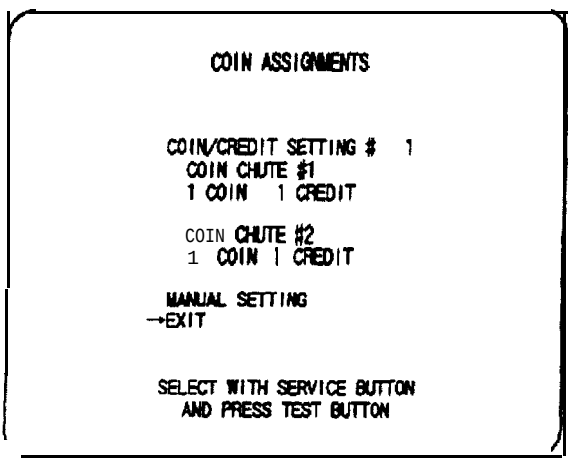
Press the SERVICE BUTTON to bring the arrow (-->) to the desired setting change item.

Press the TEST BUTTON to choose the desired setting item.

Bring the arrow to EXIT and press the TEST BUTTON to return to the menu mode.

Coin Assignments

The "COIN ASSIGNMENTS" mode permits you to set the start number of credits, as well as the basic numbers of coins and credits. This mode expresses "how many coins correspond to how many credits."



COIN/CREDIT SETTING "How many coins correspond to how many credits." In this machine, selection as per Table 9. 10 a is possible.

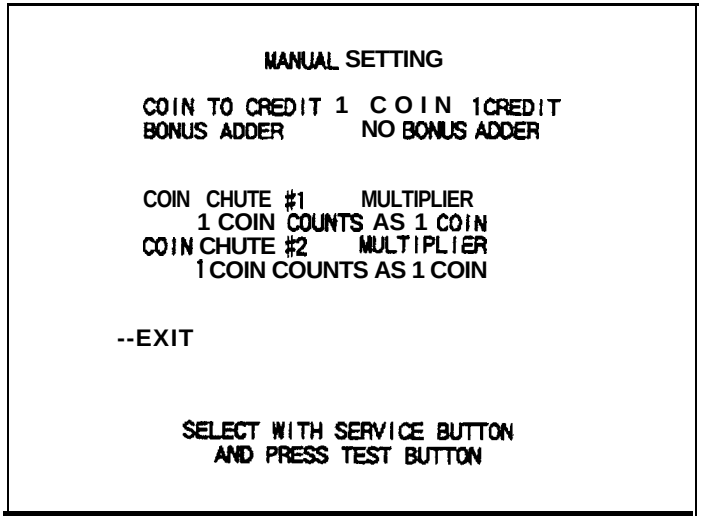
MANUAL SETTING Allows for finer settings. (Table 9. 10 b)

Press the SERVICE BUTTON to bring the arrow (-->) to the desired setting change item. Press the TEST BUTTON to choose the desired setting item.

Bring the arrow to EXIT and press the TEST BUTTON to return to the menu mode.

COIN/CREDIT SETTINGS

NAME OF SETTING	FUNCTIONING OF COIN CHUTE #1		FUNCTIONING OF COIN CHUTE #2	
SETTING #1	1 COIN	1 CREDIT	1 COIN	1 CREDIT
SETTING #2	1 COIN	2 CREDITS	1 COIN	1 CREDIT
SETTING #3	1 COIN	3 CREDITS	1 COIN	1 CREDIT
SETTING #4	1 COIN	4 CREDITS	1 COIN	1 CREDIT
SETTING #5	1 COIN	5 CREDITS	1 COIN	1 CREDIT
SETTING #6	1 COIN	2 CREDITS	1 COIN	2 CREDITS
SETTING #7	1 COIN	5 CREDITS	1 COIN	2 CREDITS
SETTING #8	1 COIN	3 CREDITS	1 COIN	3 CREDITS
SETTING #9	1 COIN	4 CREDITS	1 COIN	4 CREDITS
SETTING #10	1 COIN	5 CREDITS	1 COIN	5 CREDITS
SETTING #11	1 COIN	6 CREDITS	1 COIN	6 CREDITS
SETTING #12	2 COINS	1 CREDIT	2 COINS	1 CREDIT
SETTING #13	1 COIN	1 CREDIT	2 corns.	1 CREDIT
SETTING #14	1 COIN	2 CREDITS	2 COINS	1 CREDIT
SETTING #15	1 COIN	1 CREDIT	1 COIN	1 CREDIT
	2 COINS	3 CREDITS	2 COINS	3 CREDITS
SETTING #16	1 COIN	3 CREDITS	1 COIN	1 CREDIT
			2 corns	3 CREDITS
SETTING #17	3 COINS	1 CREDIT	3 COINS	1 CREDIT
SETTING #18	4 COINS	1 CREDIT	4 COINS	1 CREDIT
SETTING #19	1 COIN	1 CREDIT	1 COIN	1 CREDIT
	2 COINS	2 CREDITS	2 COINS	2 CREDITS
	3 COINS	3 CREDITS	3 COINS	3 CREDITS
	4 COINS	5 CREDITS	4 COINS	5 CREDITS
SETTING #20	1 COIN	5 CREDITS	1 COIN	1 CREDIT
			2 COINS	2 CREDITS
			3 corns	3 CREDITS
			4 corns	5 CREDITS
SETTING #21	5 COINS	1 CREDIT	5 COINS	1 CREDIT
SETTING #22	1 COIN	2 CREDITS	3 COINS	1 CREDIT
			5 COINS	2 CREDITS
SETTING #23	2 COINS	1 CREDIT	2 COINS	1 CREDIT
	4 COINS	2 CREDITS	4 COINS	2 CREDITS
	5 COINS	3 CREDITS	5 COINS	3 CREDITS
SETTING #24	1 COIN	3 CREDITS	2 COINS	1 CREDIT
			4 COINS	2 CREDITS
			5 corns	3 CREDITS
SETTING #25	1 COIN	1 CREDIT	1 COIN	1 CREDIT
	2 COINS	2 CREDITS	2 COINS	2 CREDITS
	3 COINS	3 CREDITS	3 COINS	3 CREDITS
	4 COINS	4 CREDITS	4 COINS	4 CREDITS
	5 COINS	6 CREDITS	5 COINS	6 CREDITS
SETTING #26	1 COIN	6 CREDITS	1 COIN	1 CREDIT
			2 COINS	2 CREDITS
			3 COINS	3 CREDITS
			4 COINS	4 CREDITS
			5 COINS	6 CREDITS
SETTING #27	FREE PLAY		FREE PLAY	


MANUAL SETTING
COIN TO CREDIT 1 COIN 1CREDIT
BONUS ADDER NO BONUS ADDER
COIN CHUTE #1 MULTIPLIER
1 COIN COUNTS AS 1 COIN
COIN CHUTE #2 MULTIPLIER
1 COIN COUNTS AS 1 COIN
--EXIT
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

COIN TO CREDIT Determines conversion coins/credit.

COIN TO CREDIT (No. of coins required for one credit)	
	1 COIN 1 CREDIT
	2 COINS 1 CREDIT
	3 COINS 1 CREDIT
	4 COINS 1 CREDIT
	5 COINS 1 CREDIT
	6 COINS 1 CREDIT
	7 COINS 1 CREDIT
	8 COINS 1 CREDIT
	9 COINS 1 CREDIT

BONUS ADDER (BONUS COIN)	NO BONUS ADDER
	2 COINS GIVE 1 EXTRA COIN
	3 COINS GIVE 1 EXTRA COIN
	4 COINS GIVE 1 EXTRA COIN
	5 COINS GIVE 1 EXTRA COIN
	6 COINS GIVE 1 EXTRA COIN
	7 COINS GIVE 1 EXTRA COIN
	8 COINS GIVE 1 EXTRA COIN
	9 COINS GIVE 1 EXTRA COIN

COIN CHUTE (#1/#2) MULTIPLIER (For each coin chute)	
	1 COIN COUNTS AS 1 COIN
	1 COIN COUNTS AS 2 COINS
	1 COIN COUNTS AS 3 COINS
	1 COIN COUNTS AS 4 COINS
	1 COIN COUNTS AS 5 COINS
	1 COIN COUNTS AS 6 COINS
	1 COIN COUNTS AS 7 COINS
	1 COIN COUNTS AS 8 COINS
	1 COIN COUNTS AS 9 COINS

VOLUME SETTING

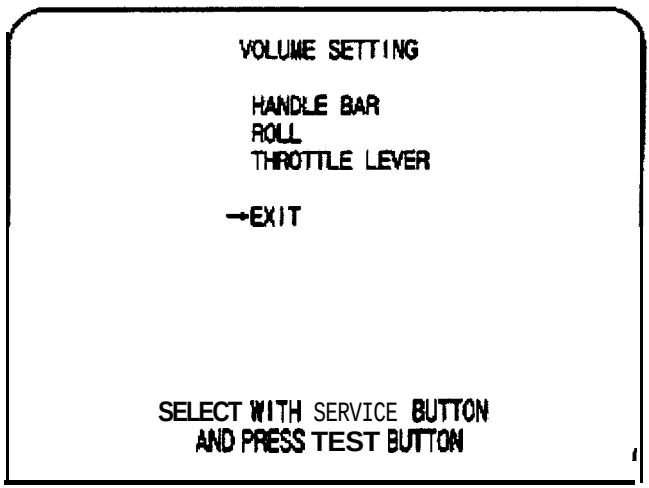
In this setting item, each VR value of the handle bars, roll and throttle can be set.

A ! CAUTION!

Performing settings while riding on the ride is dangerous, as the ride moves. Use the start button instead of the test button, and the view button instead of the Service button.

STOP IMPORTANT!

When the VR adjustment or replacement has been made, be sure to perform the setting in that particular VR value setting item.



HANDLE VOLUME SETTING

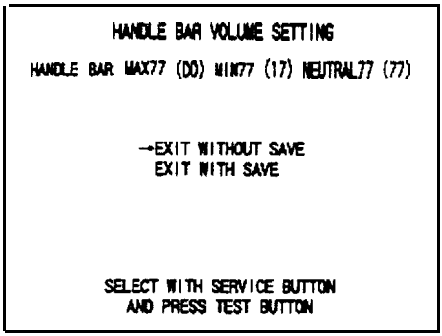
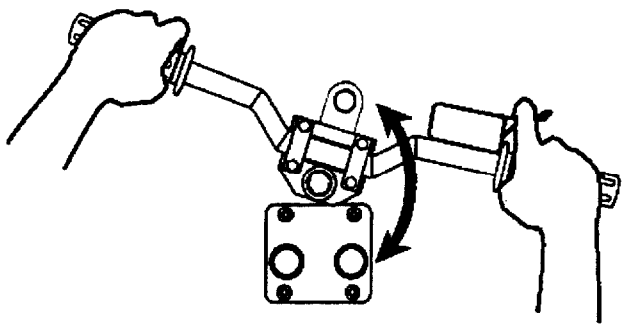

HANDLE BAR VOLUME SETTING
HANDLE BAR MAX77 (DD) MIN77 (17) NEUTRAL77 (77)
→EXIT WITHOUT SAVE
EXIT WITH SAVE
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

FIG. 9. 11. b SETTING THE HANDLE BAR VOLUME



In the V. R. setting menu screen, press the Service button to bring the arrow to HANDLE BAR.

Press the Test button to cause the HANDLE BAR VOLUME setting screen to appear.
Turn the HANDLE BAR fully to the left/right and then release.

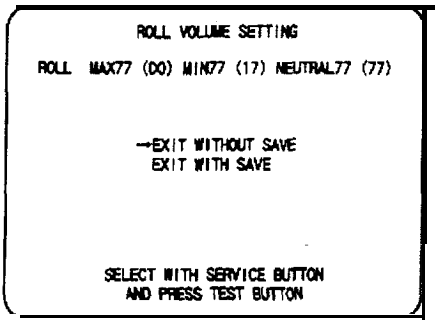
Press the Service button to bring the arrow to EXIT WITH SAVE.

Press the Test button to have the Volume Setting Menu screen return to the screen.

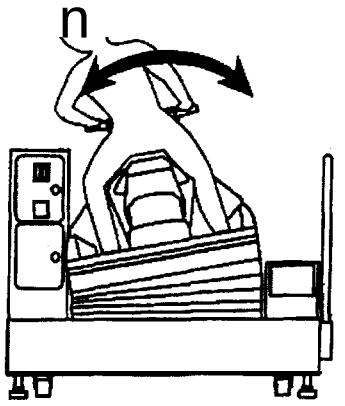
When setting other Volume values also, select the applicable select item.

Press the Service button to bring the arrow to EXIT and pres the Test button to have the Menu screen return to the screen.

ROLL VOLUME SETTING


ROLL VOLUME SETTING
ROLL MAX77 (00) MIN77 (17) NEUTRAL77 (77)
→EXIT WITHOUT SAVE
EXIT WITH SAVE
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

ROLL VOLUME SETTING



In the Volume Setting Menu mode, press the Service button to bring the arrow to ROLL.

Press the Test button to have the ROLL VOLUME setting screen appear on the screen.

Incline the Ride fully to the left/right and then cause it to be in the level position.

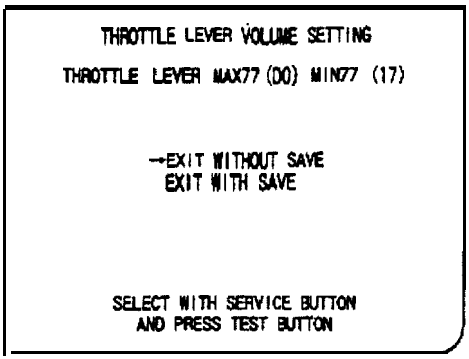
Press the Service button to bring the arrow to EXIT WITH SAVE.

Press the Test button to have the Volume Setting Menu return to the screen.

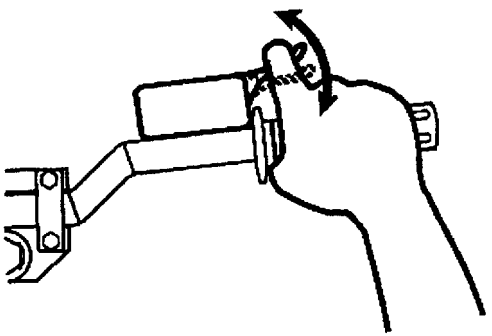
When setting other Volume values also, choose the applicable setting item.

Press the Service button to move the arrow to EXIT and press the Test button to return to the Menu mode.

SETTING THE THROTTLE VOLUME


THROTTLE LEVER VOLUME SETTING
THROTTLE LEVER MAX77 (00) MIN77 (17)
→EXIT WITHOUT SAVE
EXIT WITH SAVE
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

SETTING THE THROTTLE VOLUME



In the Volume Setting Menu, press the Service button and bring the arrow to THROTTLE LEVER.

Press the Test button to have the THROTTLE VOLUME SETTING screen appear.

Fully grip the Throttle Lever and then release.

By pressing the Service button, bring the arrow to EXIT WITH SAVE.

Press the Test button to have the Volume Setting Menu return on the screen.

When setting other Volume values also, choose the applicable setting item.

Press the Service button to bring the arrow to EXIT and press the Test button to have the Menu mode return to the screen.

VALVE TEST

This test allows the function of the Air Valve, Limit Switch and Volume to be checked.

CAUTION!

Performing settings while riding onthe ride is dangerous as the ride moves.
Use the start button instead of the test button, and the view button instead of the service button.

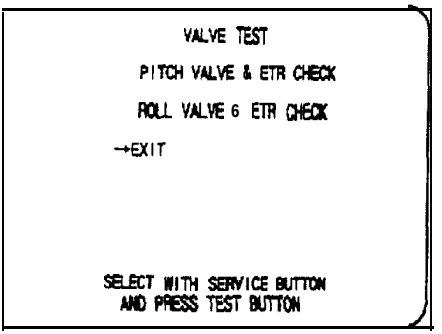
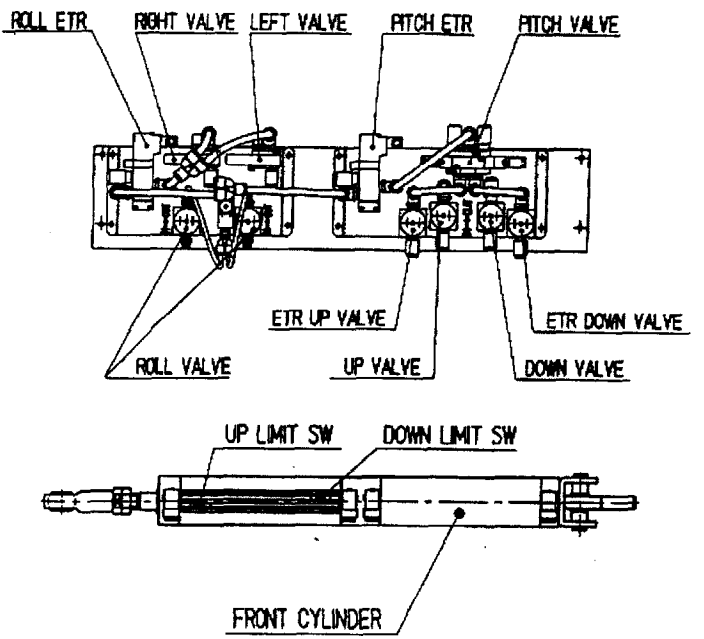
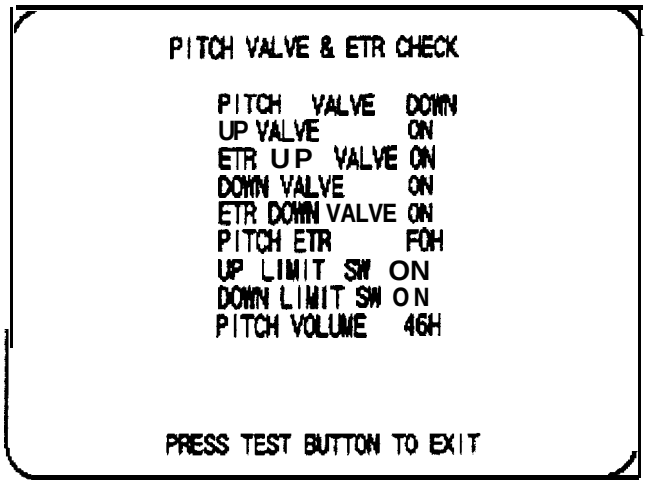


FIG. 9. 12a VALVE TEST MENU



PITCH VALVE TEST



In the VALVE TEST MENU, press the Service button and bring the arrow to PITCH VALVE & ETR CHECK.

Press the Test button to have the PITCH VALVE TEST screen appear.

Turn the Handlebars to the right to raise the Ride.

Turn the Handlebars to the left to lower the Ride.

Position the Handlebars in the center to stop the Ride.

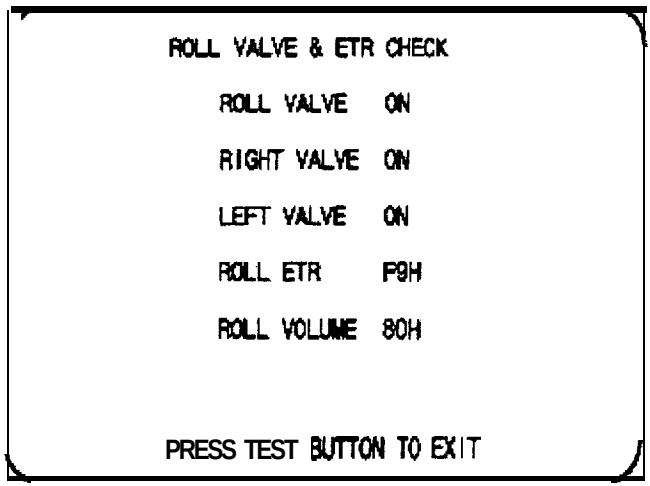
Gripping the Throttle Lever during the steps above increases the air pressure and releasing the Throttle Lever decreases the air pressure.

During the above steps, check the functioning of each Air Valve and Limit SW.

Press the Test button to return to the VALVE TEST Menu.

Choose EXIT and press the Test button to return to the Menu mode.

ROLL VALVE TEST



In the VALVE TEST MENU (PIG. 9. 12 a), press me Service button and bring the arrow to ROLL VALVE & ETR CHECK.

Press the Test button to have the PITCH VALVE TEST screen appear (PIG. 9. 12 c).

Turn the Handlebars to the right, and the Ride is subject to the centering force from the right only.

Turn the Handlebars to the left, and the Ride is subject to the centering force from the left only.

Position the Handlebars in the center to stop the centering movement.

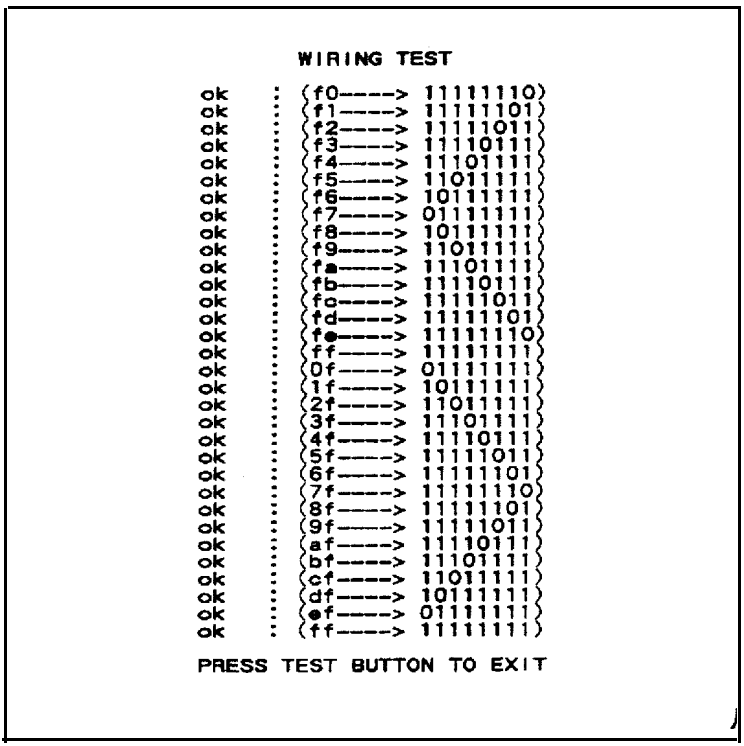
Gripping the Throttle Lever during (-)-(5) above increases the air pressure and releasing the Throttle Lever decreases the air pressure.

During Q)-(5), check the functioning of each Air Valve.

Press the Test button to return to the VALVE TEST Menu.

Choose EXIT and press the Test button to return to the Menu mode.

WIRING TEST



Selecting WIRING TEST allows the comm ɔn be ɔn GAME BD DRIVE BD to be checked automatically.
If the communication is satisfactorily condu ok" i played and if irregularity is found, "error" will be displayed.

After finishing the test, if the above Figure is displayed, fa ry
After finishing the test, press the Test button to return to u de

BOOKKEEPING

Selecting the BOOKKEEPING in the menu mode displays the bookkeeping data up to the present on the following 2 pages. Press the TEST button again to proceed to the next page.

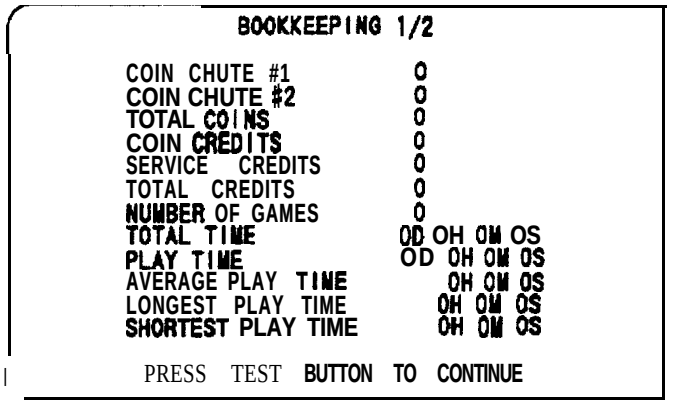

BOOKKEEPING 1/2
COIN CHUTE #1 0
COIN CHUTE #2 0
TOTAL COINS 0
COIN CREDITS 0
SERVICE CREDITS 0
TOTAL CREDITS 0
NUMBER OF GAMES 0
TOTAL TIME OD OH OM OS
PLAY TIME OD OH OM OS
AVERAGE PLAY TIME OH OM OS
LONGEST PLAY TIME OH OM OS
SHORTEST PLAY TIME OH OM OS
PRESS TEST BUTTON TO CONTINUE

FIG. 9.14 a BOOKKEEPING (1/2)

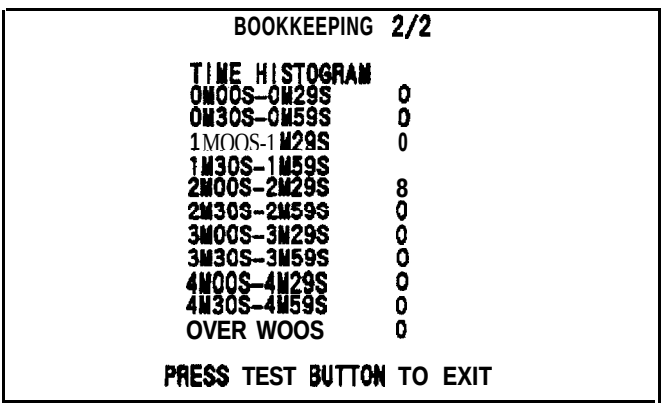
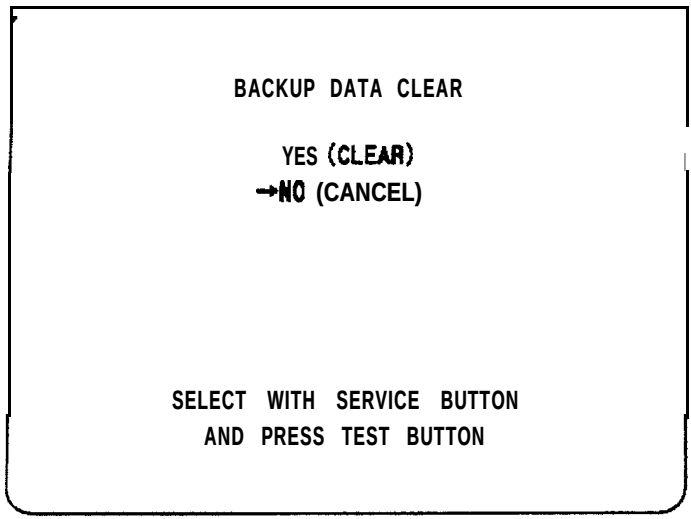


FIG. 9.14 b BOOKKEEPING (2/2)

COIN CHUTE#*	Number of coins put in. As seen from the front of the cabinet, the right hand side is #1 and the left- hand side is #2.
TOTAL COINS	Total number of coins inserted in each coin chute.
COIN CREDITS	Number of credits registered by inserting coins
SERVICE CREDITS	Credits registered by the SERVICE button
TOTAL CREDITS	Total number of credits (COIN CREDITS + SERVICE CREDITS)
TOTAL TIME	The total energized time.
TIME HISTOGRAM	By-playtime play frequency.

BACK UP DATA CLEAR

Clears the contents of BOOKKEEPING. When clearing the data, use the Service button to bring the arrow to "YES (CLEAR)" and press the Test button. When clearing is finished, "COMPLETED" is displayed. Press the Test button again to return to the Menu mode. Bring the arrow to "NO (CANCEL)" and press the Test button to have the Menu mode return on the screen without clearing the data. Note that this operation does not affect the contents of the game setting.



AIR DRIVE SYSTEM

- In order to prevent an electric shock and short circuit, be sure to turn power off before performing work by touching the interior parts of the product.
- Be careful so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident.

- Hot compressor can cause burns. After turning power off, wait until hot portions cool off to start working.
- Setting to an undesignated pressure can cause malfunctioning and trouble. Be sure to use the designated pressure.

- Perform dewatering periodically. Gathered water can have compressor load become greater and cause malfunctioning.
- When the set pressure is adjusted, be sure to check if the adjustment is appropriate.

PRECAUTIONS TO BE HEEDED BEFORE STARTING WORK

Since a compressor is employed for this product, unless the power supply of the Air Drive is turned off, the Ride can suddenly move and therefore, ensure that the power supply for the Air Drive is turned off as per the following procedure before starting work.

Turn the Main SW of AC Unit OFF.
Take out the 2 Truss Screws to remove the Lower Lid of the Front Cabinet. When removing the Lower Lid, use care so as not to damage the wiring inside the Lower Lid.
Turn the Circuit Protector inside the Lower Lid OFF.
Now, proceed to work.

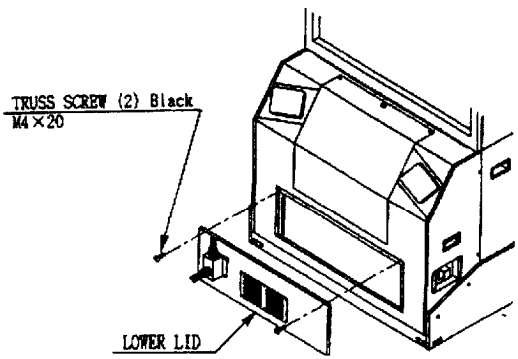


FIG. 10. 1 a

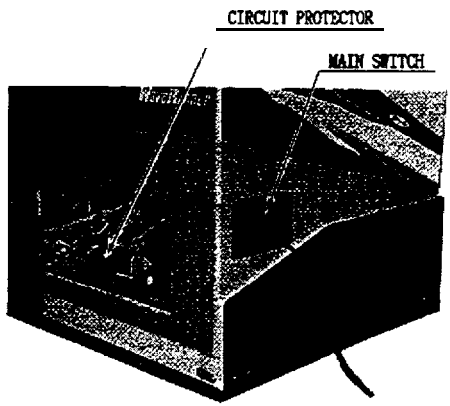
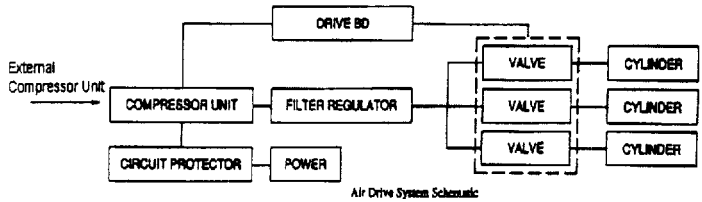


FIG. 10. 1 b

OVERVIEW OF AIR DRIVE SYSTEM

This machine has an air drive system that drives the cabinet by compressed air. The air drive system is composed of the following items:



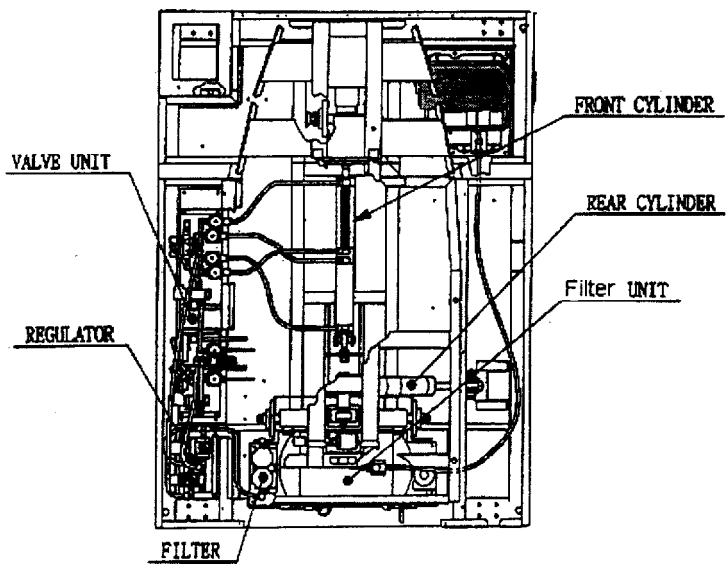
Air Drive System Schematic

COMPRESSOR UNIT
Compresses and stores air by causing the AC Motor to turn the Compressor.

FILTER REGULATOR
Filters foreign matter consisting of fine particles, and water contents in the compression air (primary side) stored in the COMPRESSOR UNIT and governs the compressed air to a preset pressure (secondary side). Two Regulators are equipped with: One for high pressure and the other for low pressure.

CIRCUIT PROTECTOR
Protects the AC motor for the compressor from overcurrent.

DRIVE BD (inside the Front Cabinet)
The DRIVE BD controls the entire Air Drive System by activating or stopping the Compressor depending on the pressure inside the Compressor Unit, and by sending a signal to open/close each valve in accordance with the progress of game play.



DEWATERING FROM THE AIR FILTER

Remove the Rear Lid of the Mechanism Base to have the water tank appear in the inner portion on the right-hand side. Although the Air Drive Mechanism of the product automatically dewaters the water from inside the Air Filter, dispose the water from inside the Air Filter by periodically dewatering (every day in the period of high humidity). The drain water can be discharged into a sewer system.

Turn the Main SW of the AC Unit and Circuit Protector inside Front Cabinet OFF, Take out the S screws to remove the Rear Lid of the Mechanism Base. The Drain Tube from the Filter is connected to the water tank. Remove the Water Tank from the Mechanism Base by firmly holding the Drain Tube so as not to allow the tube to come off from the water tank. When dewatering is performed, water will gush out together with the compressed air. Be sure to firmly hold the Drain Tube so as not to allow the tube to come off from the water tank, and press the drain nozzle underneath the Filter in the horizontal direction. Unless the Tube is firmly held, the water can splash out in the periphery The drained water can be discharged into a sewer system. After dewatering is finished, shake the end of the Drain Tube off to remove water thoroughly, put the tube end into the water tank, and return the water tank to the Mechanism Base.

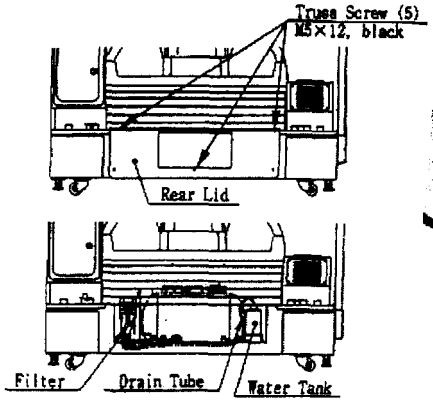
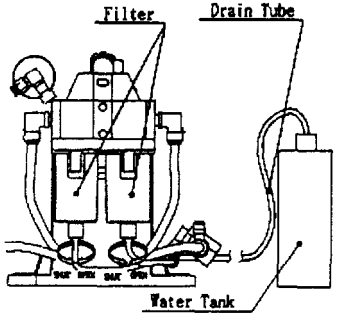


FIG. 10. 2 a



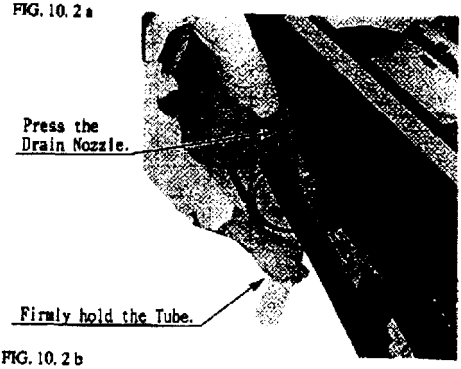
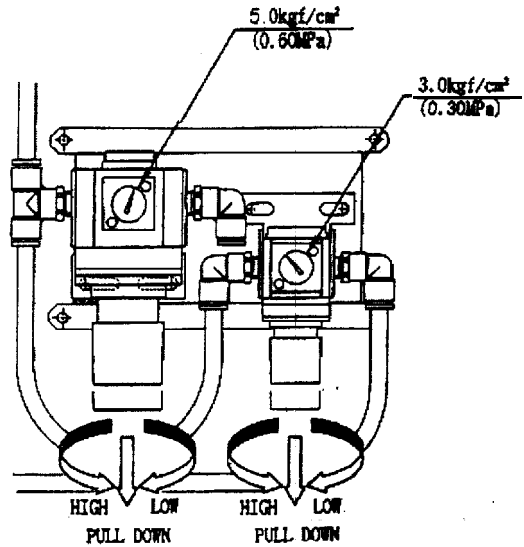


FIG. 10. 2 b

REGULATOR

The compressed air (primary side) in the air tank is governed to preset pressures by regulators before the air pressure is sent to the cylinders. Check set pressure every 2 months. Remove Lid Left from the Mechanism Base to have the Regulator Unit appear, and check the pressure with the Pressure Gauge attached to each Regulator. If the pressure within the Compressor is insufficient, the Regulator's Pressure Gauge will not indicate the correct value. When checking, first turn the Main SW on and wait until the Compressor operation stops. Pressure setting given at the time of shipment are shown in the figure at right.



If the actual pressure is different from the set pressure, adjust it as follows: Before proceeding the work, be sure to turn the Main SW off. However, if the pressure within the Compressor is insufficient, adjustments can not be performed correctly. Fist, turn the Main SW on, and after the Compressor operation stops, turn the SW off, and then proceed the work.

Pull down the Adjustment Knob of the Regulator until a click is heard.

Turn the Adjustment Knob to make adjustment to the preset pressure.

When the correct setting is established, push up the adjustment knob until a click is heard.

After the setting is finished, play game and check the regulator's pressure gauge once again.

MAINTENANCE OF THE MECHANISM

WARNING!

In order to prevent an electric shock and short circuit, be sure to turn power off before performing-work by touching the interior parts of the product. Be car&l so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident. After the power is turned off, close the Main Cock, and then start working. The Main Cock not closed can cause serious accidents resulting from cylinder movement, etc., due to some cause. Periodically retighten the designated bolts. Continuing business operation with the bolts as is loosened can cause serious accidents. When assembling, be sure to perform the work by plural persons. Depending on the assembly work, there are some cases in which performing the work by a single person can cause personal injury.

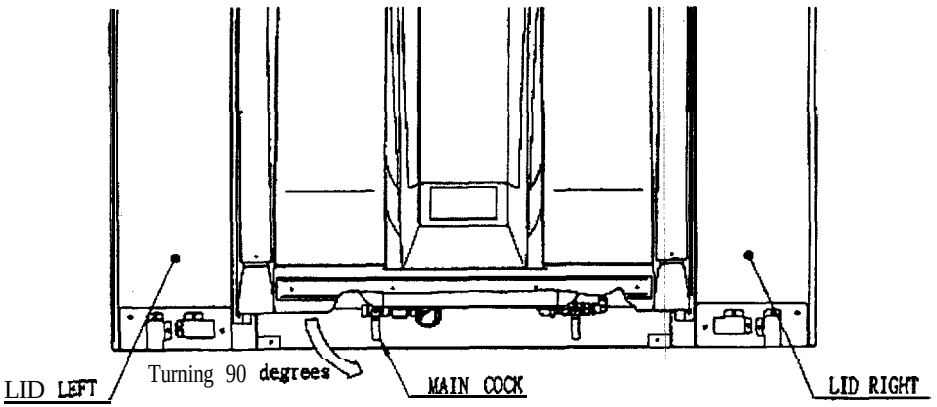
CAUTION!

Immediately replace the important parts, which are intended for hazard prevention, if damaged or omitted. Non- replacement of these parts can cause accidents. Hot Compressor can cause burn. After turning the power off, wait until the high temperature portions cool off to start working.

The mobile parts of this machine needs greasing once every 6 months. At the same time, retighten each installation bolts. Perform the above Maintenance work after removing each Lid from the Mechanism Base, as per the following procedure:

REMOVING THE LID BEFORE STARTING MAINTENANCE WORK

Turn the Main SW of the AC Unit and Circuit Protector inside the Front Cabinet OFF.
Take out the S screws to remove the Rear Lid.
There are 2 Air Cocks inside the Rear Lid. Close the Main Cock on the left side by turning 90 degrees.



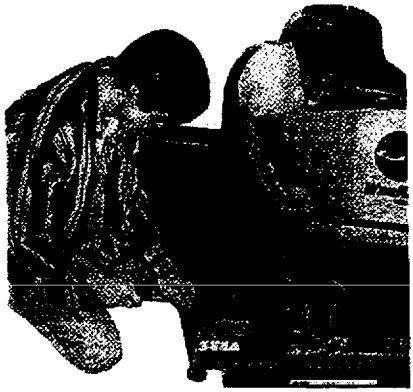
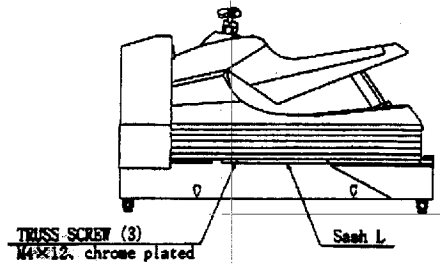


PHOTO 1

④ Take out the 3 screws to remove Sash L (L type fitting). (Photo 1, FIG. 11. I b)



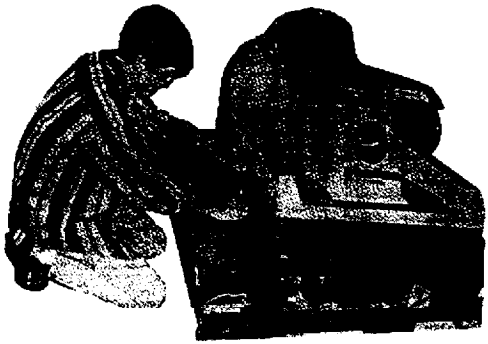


PHOTO 2

⑤ Remove the 3 screws

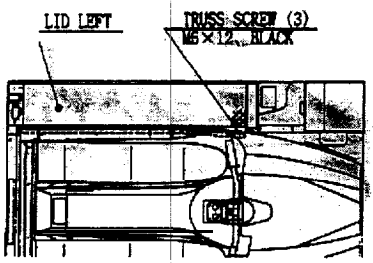


PHOTO 3

⑥ Remove Lid Left. Use care when removing the Lid so as not to damage the wiring inside the Lid, and disconnect the 2 connectors. Removing the Lid Left allows the Regulator to be viewed (refer to 10 • 4).

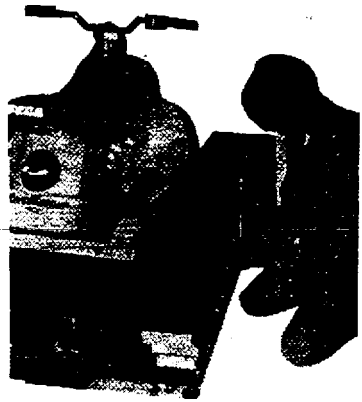
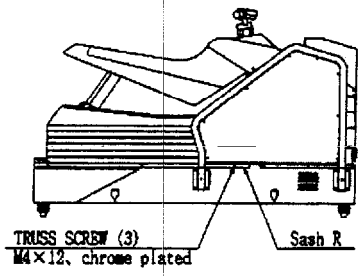


PHOTO 4

⑦ Take out the 3 screws to remove Sash R (L type fitting). (Photo 4, FIG. 11. 1 d)



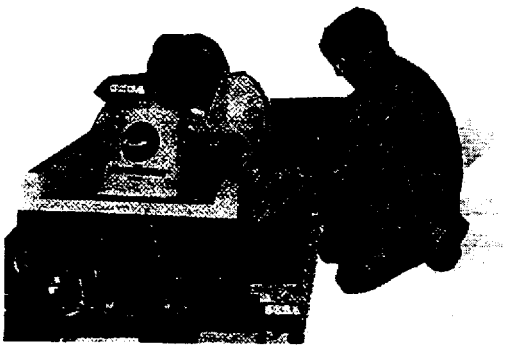


PHOTO 5

⑧ Remove the 2 screws (Photo 5, FIG. 11. 1 e).

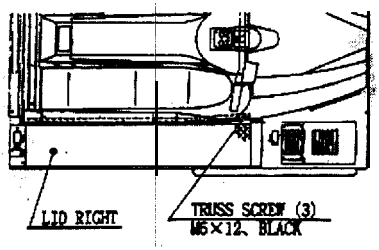


PHOTO 6

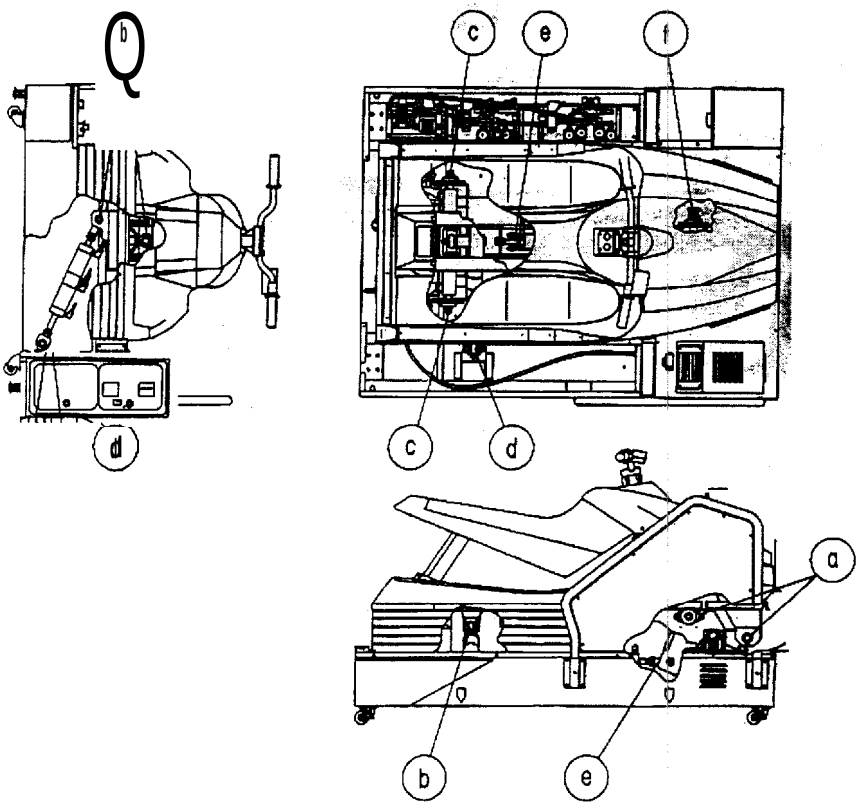
⑨ Remove Lid Right Use care when removing the Lid so as not to damage the wiring inside the Lid, end disconnect the 2 connectors (Photo 6).

GREASING AND RETIGHTENING THE BOLTS

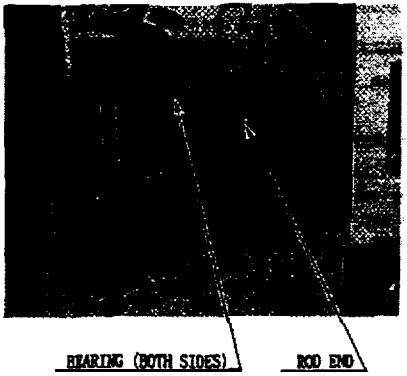
STOP
IMPORTANT!

Be sure to use appropriate grease. Using an improper grease can cause parts damage.

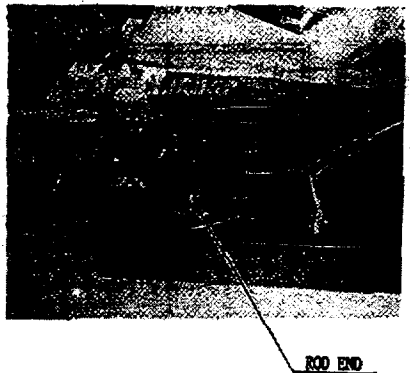
Once every 6 months, apply greasing to the mobile parts. Use spray grease. Apply spray grease to the Rod End and Bearing from the grease nipple. At the same time, check to see that all the securing nuts are tight. If any are loosened, re-tighten at this time.



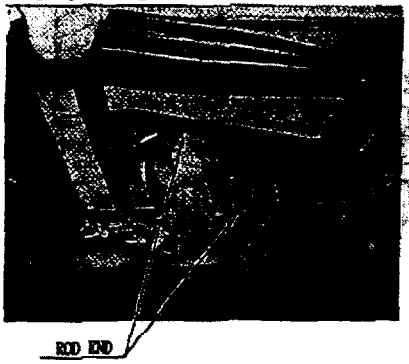
ⓐ CRANK PORTION



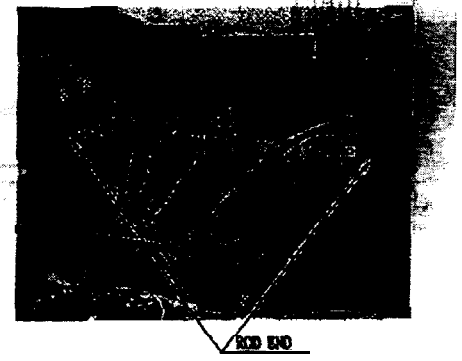
ⓓ LOWER PART OF CYLINDER



ⓑ UPPER PART OF LINK & UPPER PART OF CYLINDER

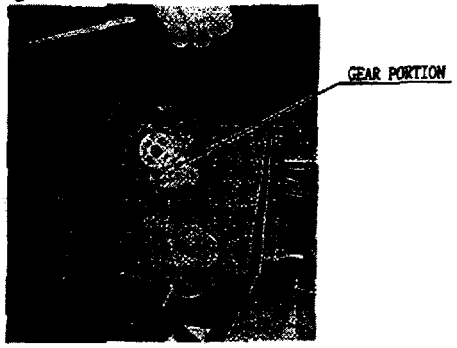


ⓔ UPPER PART OF FRONT CYLINDER



ⓒ LOWER PART OF LINK

ⓕ PITCH VOLUME PORTION



ADJUSTMENT AND REPLACEMENT OF PITCH VOLUME

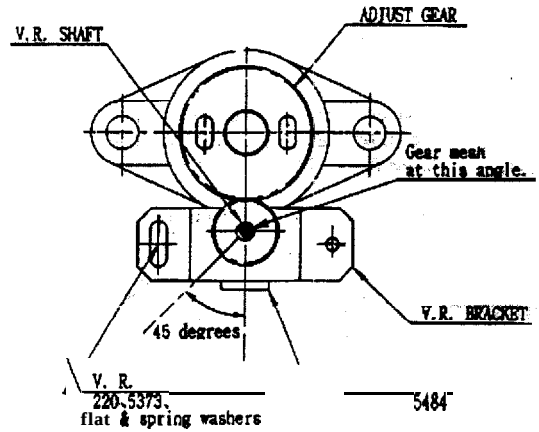
During game, in the cases where the vertical movements of the Ride is irregular or the Volume indicates abnormal values, Pitch Volume Gear mesh may be wrong, or Volume malfunctioning may be the cause. Make adjustments or replace as per the following procedure:

Turn the Main SW of the AC Unit and Circuit Protector inside the Front Cabinet OFF (see 10—1).

Remove the Rear Lid of the Mechanism Base, and close the Main Cock.

Remove the Lid Left of the Mechanism Base. The Pitch Volume can be seen on the side of the lower front part of the Ride.

Loosen the 2 screws which secure the V. R. Bracket to move the V. R. Bracket.



Move the Volume Bracket to disengage gear mesh, turn the Volume Shaft in the manner so that the Volume Shaft cut portion faces 45 degrees lower left as shown.

Have the gears meshed and tighten the 2 screws to secure the Volume Bracket.

After finishing adjustments, be sure to perform Volume setting.

When the Volume is malfunctioning, first disconnect the connectors connected to the Volume, take out the 2 screws which secure the Volume Bracket, and remove the Volume Bracket with the Volume as is attached.

Remove the gear from the Volume Shaft and replace the Volume.

REPLACING THE BELLOWS

The Bellows are important hazard prevention parts. In case of damage or omission, replace them immediately.

Remove each Lid of the Mechanism Base.

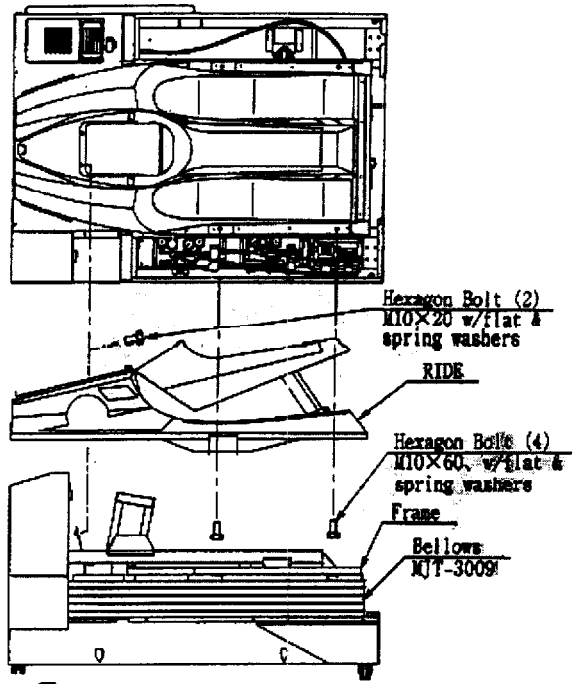
Take out the Handlebars to remove the Front Cover.

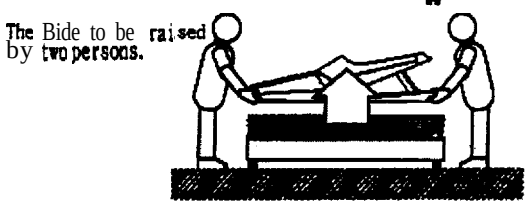
Remove the 6 hexagon bolts.

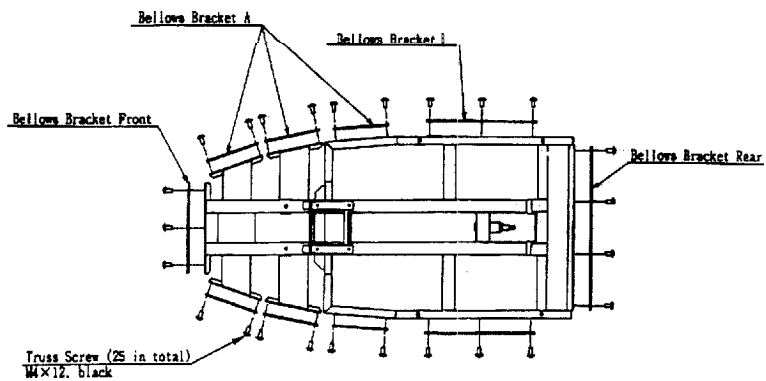
Use two persons to raise the Ride and remove from the Mechanism Base.

Take out a total of 25 screws and remove the 10 Brackets which secure the Bellows to the Frame.

Replace the Bellows by removing from the Frame.







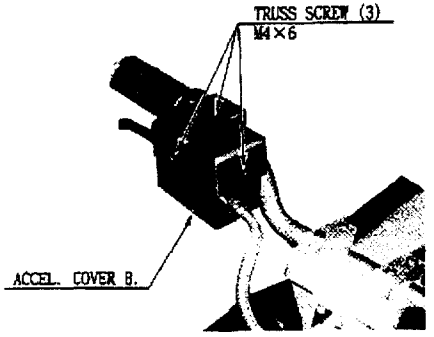
HANDLE MECHANISM

In the Volume Setting Menu (FIG. 9.11 a), press the Service button and bring the arrow to THROTTLE LEVER.

Press the Test button to have the THROTTLE VOLUME SETTING screen appear (FIG. 9.11 d).

Fully grip the Throttle Lever and then release.

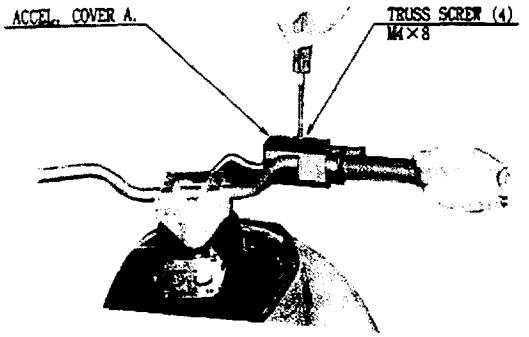
By pressing the Service button, bring the arrow to EXIT WITH SAVE.

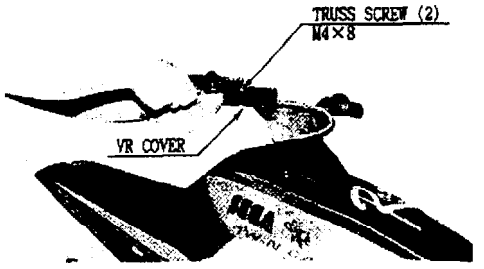


Press the Test button to have the Volume Setting Menu return on the screen.

When setting other Volume values also, choose the applicable setting item.

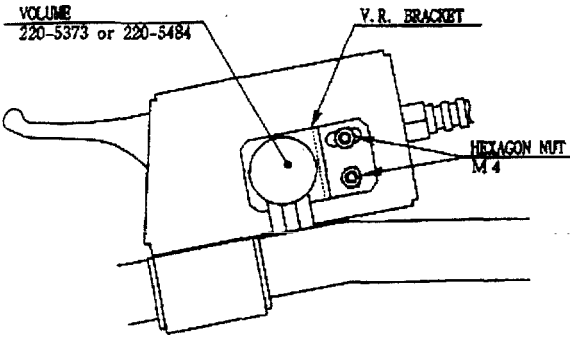
Press the Service button to bring the arrow to EXIT and press the Test button to have the Menu mode return to the screen.





THROTTLE VOLUME

Loosen the 2 Nuts which secure the Volume Bracket to move the Volume Bracket.



Moving the Volume Bracket causes Adjust Gear mesh to be disengaged.

Adjust gear mesh and tighten the 2 Nuts.

Grip the Throttle Lever and check to ensure that the V. R. value variations are within the rotatable range of the Volume Shaft.

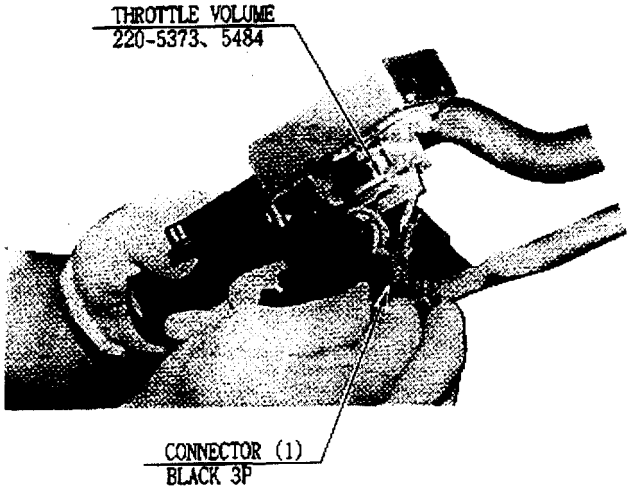
After finishing adjustments, be sure to perform Throttle Volume setting on the Volume Setting screen in the Test mode.

In order to prevent an electric shock and short circuit, be sure to turn power off before performing work by touching the interior parts of the product. Be careful so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident.

Turn power off.

Perform the above adjustment procedure.

Disconnect the connector connected to the Throttle Volume.



Take out the 2 Nuts which secure the Volume Bracket, and remove the Volume Bracket with the volume as is attached.

Remove the Volume Gear from the Volume Shaft, and replace the Volume by removing from the Bracket.

After the replacement, perform Volume Setting in the Test mode.

HANDLE VR

WARNING!

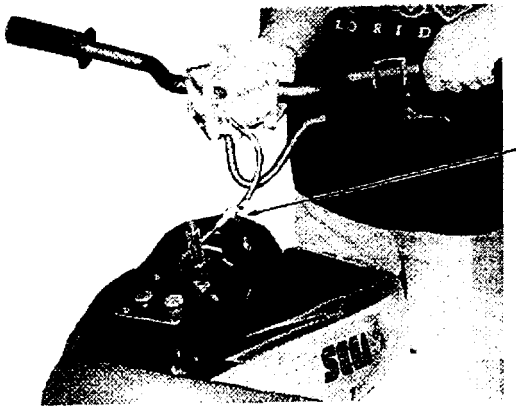
In order to prevent an electric shock and short circuit, be sure to turn power off before performing work by touching the interior parts of the product. Be careful so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident.

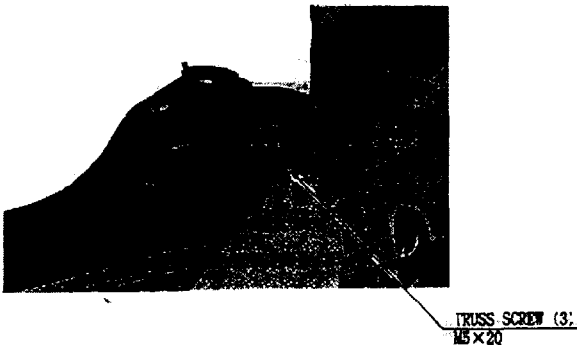
When adjusting or replacing the Handle Volume, remove the Centering Mechanism in the following procedure:

Remove the hexagon socket bolt to pull out the Handlebars from the Handle Shaft. The Handlebars incorporate wiring connections.
When pulling the Handlebars out, use care so as not to damage the wring.

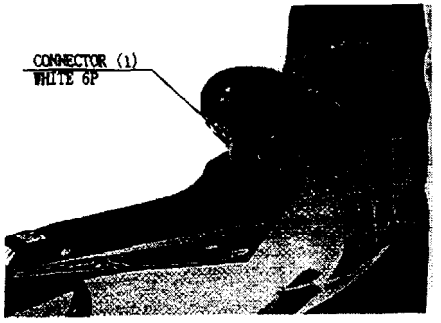
① Remove the hexagon socket
the Handlebars from the Han
Handlebars incorporate wirir
When pulling the Handlebars
so as not to damage the wirir

② Disconnect the 3 connectors.

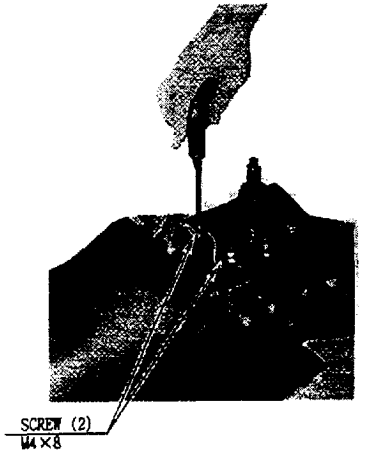




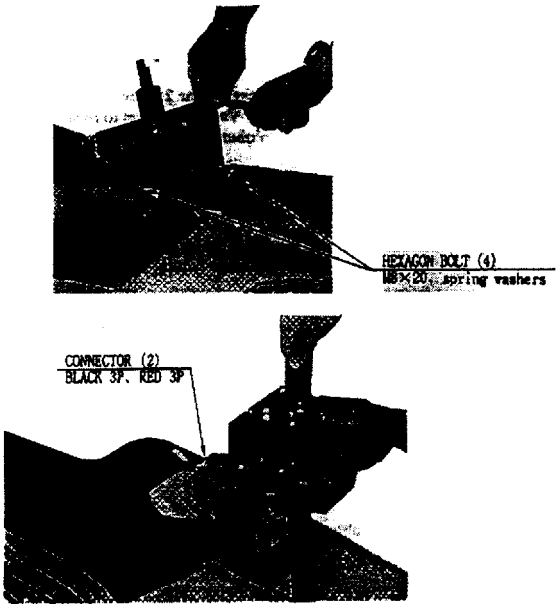
Take out the 3 Truss screws and remove the Front Cover. The Front Cover has wiring connections inside. Use care when removing the Front Cover.



Disconnect the connector.



Take out the 2 screws and remove the Earth Wire.

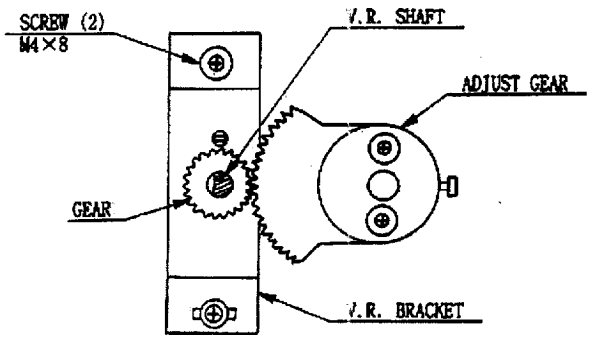


Take out the 4 hexagon bolts which secure the Centering Mechanism. Be sure to remove the hexagon bolts only from the comers as seen from above the C'entering Mechanism.

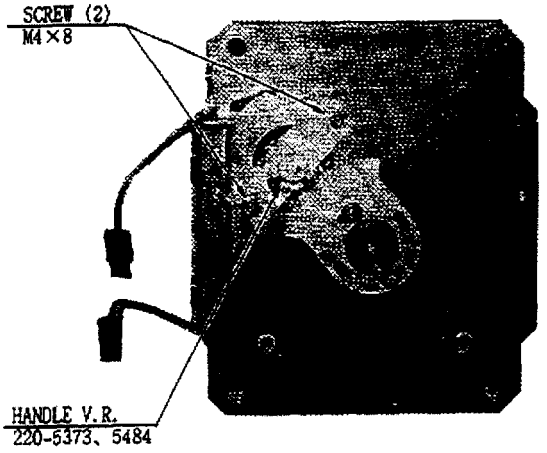
Carefully raise the Centering Mechanism and disconnect the 2 connectors connected to the Centering Mechanism.

VR ADJUSTMENT

Loosen the 2 screws which secure the V.R. Bracket to move the V.R. Bracket. Move the V.R. Bracket to disengage ADJUST GEAR mesh and move the V.R. shaft in the manner so that the V.R. shaft cut portion faces the opposite side of ADJUST GEAR as shown. Have the gears meshed and tighten the 2 screws. Carefully turn the Handle Shaft to the left/right and check to ensure that the value variation is within the mobile range of the Volume. After finishing adjustments, be sure to perform Volume Setting in the Test mode.



VR REPLACEMENT

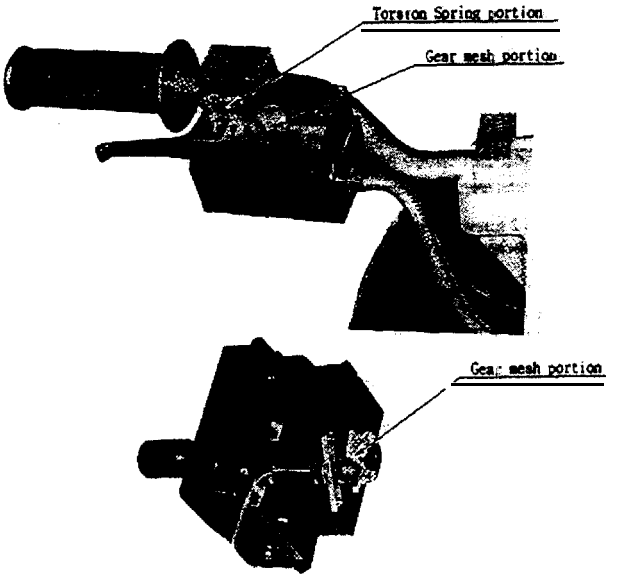


Take out the 2 screws which secure the volume bracket to remove the bracket.

Remove the volume gear from the VR to replace the VR.

After the replacement, perform volume setting in the test mode.

Once every three months, apply spray grease to the parts indicated below.



COIN SELECTOR

HANDLING THE COIN JAM

If the coin is not rejected even when the REJECT button is pressed. open the coin chute door and open the selector gate. After removing the jammed coin, put a normal coin in and check to see that the selector correctly functions.

CLEANING THE COIN SELECTOR

The coin selector should be cleaned once every 3 months. When cleaning, follow the procedure below:

① Turn the power for the machine OFF. Open the coin chute door.

② Open the gate and dust off by using a soft brush (made of wool, etc.).

③ Remove and clean smears by using a soft cloth dipped in water or diluted chemical detergent and then wrung.

④ Remove the CRADLE.

When removing the retaining ring (E ring). be very careful so as not IO bend the shaft.

⑤ Remove stain from the shaft and pillow portions by wiping off with a soft cloth, etc.

⑥ After wiping off as per ⑤ above, further apply a dry cloth, etc. to cause the coin selector to dry compktely.

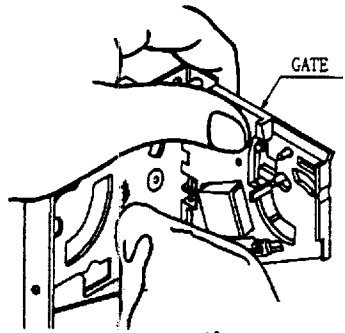


FIG. 10 a

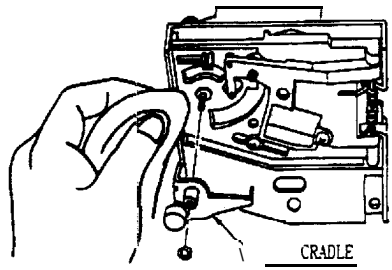


FIG. 10 b

STOP
IMPORTANT!

- Never apply machine oil, etc. to the Coin Selector.
- After cleaning the Coin Selector, insert a regular coin in the normal working status and ensure that the Selector correctly functions.

COIN INSERTION TEST

Once every month, when performing the Coin SW Test, simultaneously check the following:

- ☐ Does the Coin Meter count satisfactorily?
- ☐ Does the coin drop into the Cashbox correctly?
- ☐ Is the coin rejected when inserted while keeping the Reject Button pressed down?

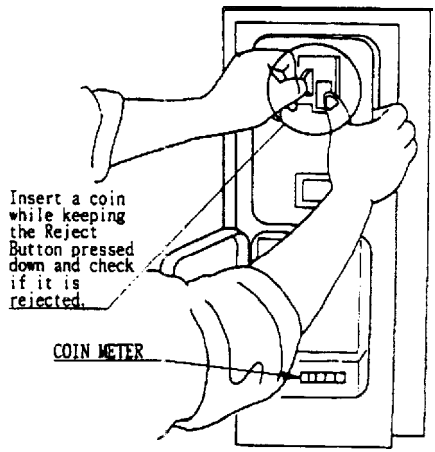
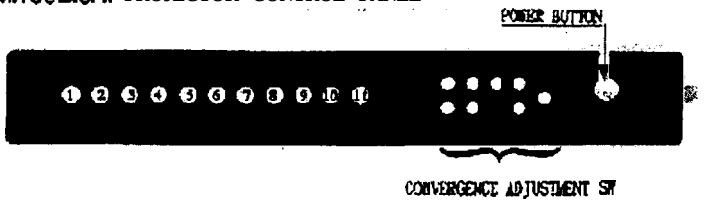


FIG. 10 c

STATIC CONVERGENCE ADJUSTMENT

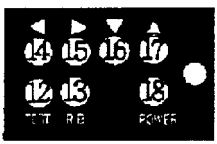
: MITSUBISHI PROJECTOR

☐ MITSUBISHI PROJECTOR CONTROL PANEL

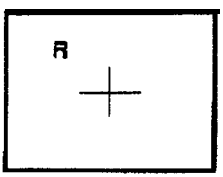


① V. POS ② H. POS ③ R-GAIN 4 G-GAIN ⑤ B-GAIN
⑥ CONT ⑦ BRI ⑧ V·W ⑨ H·W
⑩ R·H·L, ⑪ B·H·L } Linearity adjustments in horizontal directions (red or blue) are made.

STATIC CONVERGENCE ADJUSTMENT



Convergence Adjustment SW



⑫ TEST	Test mode on/off key
⑬ R/B	R/B shift key
⑭ ◁	Left shift key
⑮ ▷	Right shift key
⑯ ▽	Lower shift key
⑰ △	Upper shift key
⑱ POWER	Power button

① For the Convergence adjustment mode, press the test mode on/off key ⑫.

② Ensure that "R" is displayed on the screen.

③ Make adjustment so as to cause the red cross pattern to match with the green cross pattern by using Left Shift key ⑭, Right shift key ⑮, Lower shift key ⑯ and Upper shift key ⑰.

④ By using R/B shift key ⑬, cause the red adjustment "R" to shift to blue adjustment "B" and make sure that "B" is displayed on the screen.

⑤ In the same manner as in ③ above, cause the blue cross pattern to match with the green cross pattern.

⑥ After making adjustment, press the test mode on/off key ⑫ to cancel the Convergence adjustment mode.

STATIC CONVERGENCE ADJUSTMENT WITH REMOTE CONTROL

STOP
IMPORTANT!

- Although Remote Control Buttons other than those specified below do not function even if pressed during Convergence Adjustment, do not press them during adjustment work so as to avoid causing malfunctioning.
- Operate the Remote Control towards the PTV screen. If directed other than to the PTV screen, the Remote Control does not function.

BEFORE USING THE REMOTE CONTROL:

First make. sure that the maim SW on the Projector's control panel is ON (the LED adjacent to the main SW is lit).

The Remote Control has 2 different types. Depending on the type. the Adjustment procedure is different.

In case of REMOTE CONTROL (Part No. 200-5298):

① For the Convergence Adjustment mode, press the test button (Figures 1・5 below). Ensure that "R" is displayed on the screen.

② Make adjustment so as to cause the red cross pattern to match with the green cross pattern. When the red cross matches the green cross, the green cross turns yellow or white (Figures 2・3・4 below).

Use remote control buttons shown below to move the red cross as follows:

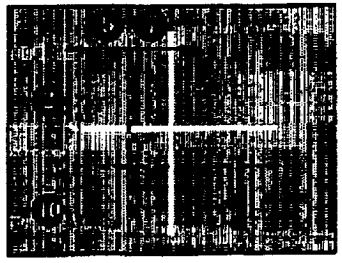
Button ⑤ ..... to the left.
⑦ ..... to the right.
② ..... Upward.
⑩ ..... Downward.

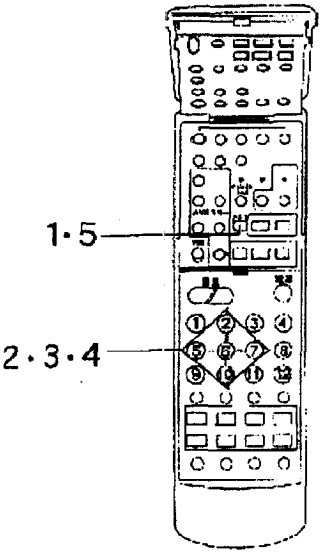
③ Use Remote Control button ⑥ to shift "R" to "B." Make sure that "B" is displayed on the screen. Each time Button ⑥ is pressed, red and blue adjustments are shifted.

④ In the same manner as in ② above, cause the blue cross to match with the green cross. When the blue cross matches with the green cross, the green cross turns white.

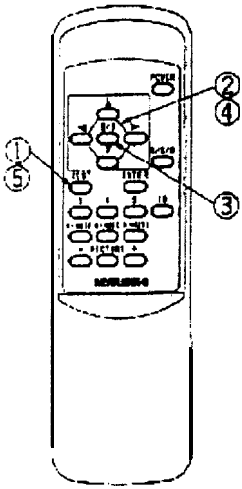
⑤ After adjustment is made, press the test button (Figures 1・5 below) to cancel the Convergence Adjustment mode.

※ When 2 minutes or more elapses in the Convergence mode screen without taking any action, the on-screen adjustment mode will disappear.

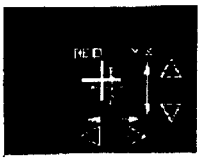




In case of REMOTE CONTROL (Part No. 200 • 5532):



Red Line Adjustment


Press SHIFT to superimpose the red line on the green line.

Completion of Adjustment

① Press the TEST KEY to have the red line adjustment screen appear.

② Superimpose the red cross on the green cross at the center of the screen.
Move the red cross to the left, right, up and down respectively with ◀ ▶ ▲ and ▼ of the Remote Control.
When the red cross is superimposed on the green cross, the green cross turns into yellow or while.

③ Press the R/B Key to have the blue line adjustment screen appear. Each time R/B Key is pressed, the red line and blue line win be alternated.

④ In the manner similar to ② above, press each key to superimpose the blue cross on the green cross. When it is superimposed, the cross in the center will become white.

⑤ Press the TEST Kay to exit from the adjustment mode.

During STATIC CONVERGENCE Adjustment Mode, if no action is taken within 5 minutes, the Adjustment Mode will be exited automatically.

REPLACEMENT OF FLUORESCENT LAMP

WARNING!

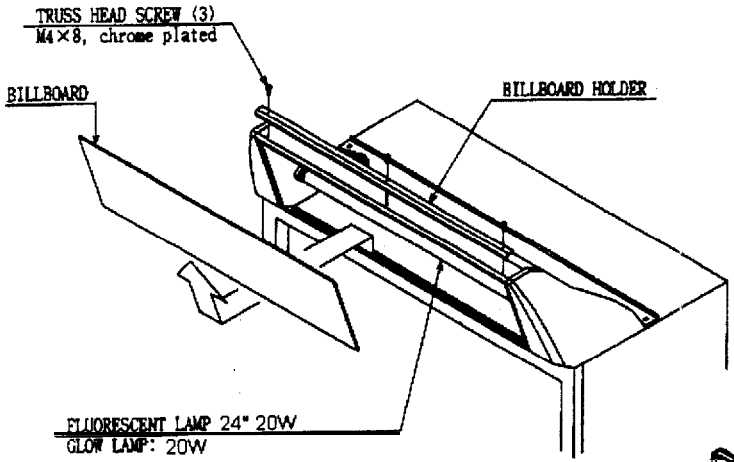
- When performing the work, be sure to turn all power off. Working with power on can cause an electric shock or short circuit accident.
- The fluorescent lamp, when hot, can cause bums. Be very careful when replacing the fluorescent lamp.

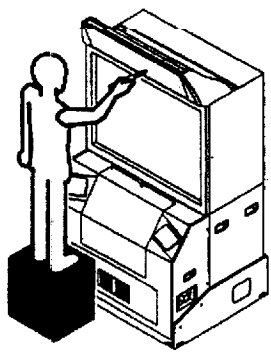
CAUTION!

To perform work safely and securely, be sure to prepare a step which is stable. Using an unsafe or unstable step can cause you to fall down.

Remove the 3 screws which secure the holder to the upper part of the billboard.

Pull out the holder to upper side of the billboard, and replace the fluorescent lamp.





When performing work, prepare a step.

EXTERNAL AIR COMPRESSOR UNIT

THE SEGA WAVE RUNNER GAME IS EQUIPPED WITH AN EXTERNAL, PERMANENTLY LUBRICATED AIR COMPRESSOR UNIT, WHICH IS HOUSED IN A SEPARATE BLACK BOX.

The black compressor box is not attached to any portion of the game, The unit may be located within 25 feet of the game, and no more than 6 feet from the electrical outlet.

WARNING!

The Air Compressor unit must have excess water drained from the air tank on a daily basis.

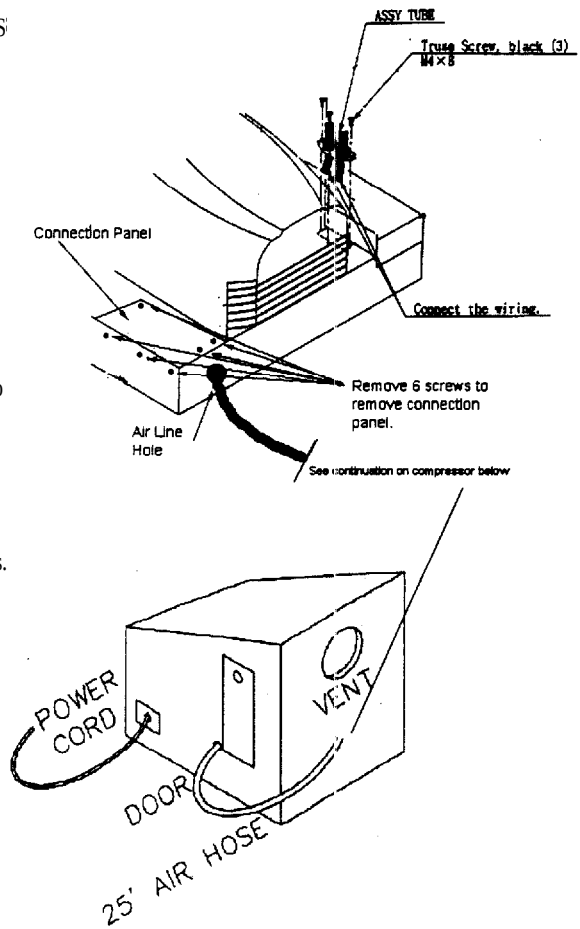
For specifications and service information, refer to the attached EXTERNAL AIR COMPRESSOR UNIT SUPPLEMENT to this OWNERS MANUAL.

TO INSTALL THE EXTERNAL COMPRESSOR UNIT

Remove the 6 screws which secure the connection panel to the base of the ride. Lifting the panel, locate the air line hole, and the quick disconnect connector inside the game. Locate the black compressor box and open the key-locked door. Pull air line hose out of the black compressor box and route it to the air line hole in the game.

Connect the air line hose quick connector to the quick connector in the game. Verify that the connection is secure and tight.

Replace the panel and tighten all screws.



PERIODIC INSPECTION ITEMS

The air compressor employed in this game moves the ride during the game. The items listed below require periodic inspection and maintenance to retain their performance and ensure safe operation.

WARNING!

- Be sure to check once a year to see if power cords are damaged, the plug is securely inserted in the socket, or if dust is accumulated between the power plug and socket. Using this product with accumulated dust can cause fire or electric shock.
- Periodically, at least once per year, ensure that the interior of the cabinet is free from accumulated dust. If you require assistance regarding the proper method of cleaning the interior of the cabinet, contact your distributor or Sega's Technical Service department for instructions. Allowing dust to accumulate in the cabinet can cause tire or other serious accidents.

ITEMS	DESCRIPTION	PERIOD
CABINET	Check lee adiuster adjustment.	Daily
AIR DRIVE SYSTEM	Dewaterine of filter. Check regulator's air pressure. Check air cleaner.	Weekly Bi-Monthly Bi-monthly
MECHANISM	Check safety sensor. Check Bellows. Greasing pillow block and rod end. Tighten all bolts.	Daily Daily Biannually Bi-annually
HANDLE MECH	Check volume value. Greasing of gear and bearing.	Monthly Quarterly
COIN CHUTE TOWER	Check coin switches. oin insertion test. Coin selector cleaning.	Monthly Monthly Quarterly
EXTERNAL AIR COMPRESSOR	Dewater from air tank.	Daily

TROUBLESHOOTING

WARNING!

In order to prevent an electric shock, be sure to turn power off before performing work and touching the interior of the machine.
Be careful so as not to damage wiring. Damaged wiring can cause an electric shock or short circuit accident.

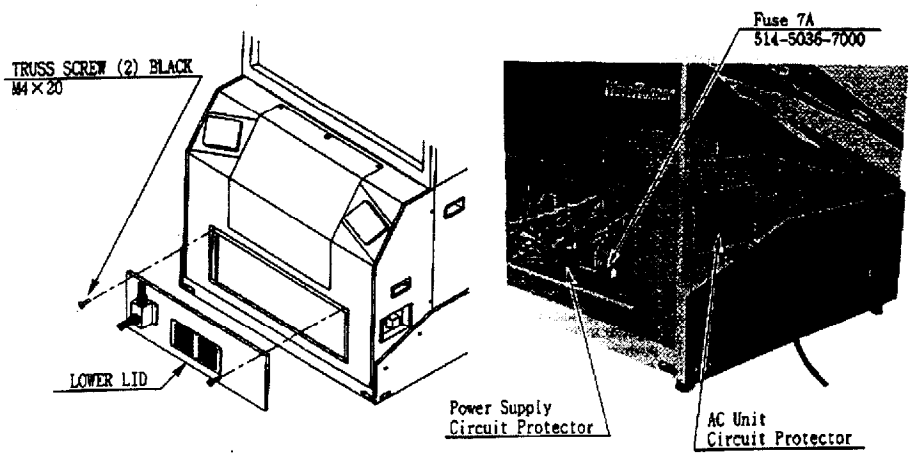
For troubleshooting, first check the connection of the wiring connectors.

PROBLEMS	CAUSE	COUNTERMEASURES
When the main SW is turned on. the machine is not activated.	The power is not on. Incorrect power source/voltage. AC unit circuit protector activated due to instantaneous overcurrent.	Firmly insert the plug into the outlet. Make sure the power supply/voltage are correct. First, remove the cause of overcurrent and reinstate the circuit protector to it's original status. Replace fuse as needed. 7 amp 250 V AC
The color of the image on PTV screen is incorrect.	Incorrect monitor adjustment.	Make appropriate adjustments.
The on-screen image sways and/or shrinks.	Power source and voltage are not correct.	Make sure power supply and voltage are correct.
No PTV screen image.	Connector connection fault.	Check connections to PTV from cabinet.
Sound is not emitted.	Sound volume adjustment is not correct. Malfunctioning board and amp Connector connection is incorrect.	Adjust the switch unit volume control. Perform sound test to check. Check connections from PTV to cabinet.
During game play, Compressor does not operate.	Circuit protector functioned due to momentary overload. Compressor fault.	Remove cause of overload and restore power. Refer to the troubleshooting section of the EXTERNAL COMPRESSOR UNIT MANUAL SUPPLEMENT.
During the game, ride does not operate.	Safety sensor functioned. Air Tank Cock is closed. Preset pressure is incorrect. Air leakage. Communication fault between the main board and drive board.	Remove the foreign article. Open the cock. Make pressure adjustment. Check the air drive system. Check the wiring test.
During the game, the ride does not turn when handlebars are turned.	Deviation of handle volume. Malfunction of handle volume.	Adjust the volume value in test mode. Replace the volume.
When gripping the throttle, the ride does not advance	Deviation of throttle volume. Malfunction of throttle voulme.	Adjust the volume value in test mode. Replace the volume.

ITEM	DESCRIPTION	COUNTERMEASURES
Vertical movement of the tide during game play is weak and irregular.	Initial setting is wrong. Malfunction of pitch volume. Reset pressure is incorrect. Air leakage. Communication fault between the main board and drive board. Air damper adjustment fault.	Turn power off then back on to perform initial setting movement. Replace volume. Make pressure adjustment. Check the air drive system. Check in the wiring test. Air damper adjustment is needed.
Left/Right movements of the ride is weak and irregular.	Deviation of roll volume. Preset pressure is incorrect. Air leakage. Communication fault between Main board and Drive board.	Adjust volume values. Make pressure adjustment Check tne air drive system. Check in the wiring test.
Fluorescent lamp does not light up.	Fluorescent lamps need replacement. The connector is disconnected.	Replace the lamp. Check connections.
Interactive play is not possible.	Communication cable is disconnected. Cable connections are not correct. Settings for communication play are not correct.	Connect the cable. Connect the cable correctly. Ensure that the game assignments are correct.

WARNING!

- In order to prevent electric shock and short circuit, he sure to turn off power before performing work by touching the interior parts of the product.
- After removing the cause of an overcurrent, reinstate the circuit protector. Depending on the cause of overcurrent, using the circuit protector without removing the cause could result in the generation of heat and a fire.
- After eliminating the cause of a blown fuse, replace the fuse. Using the fuse after it has blown can cause generation of heat, resulting in fire.



AIR DAMPER ADJUSTMENT

In this machine, the cylinders are equipped with air dampers to soften the impact created by the ride movements. If the cylinders amplitude of vibration or the impact is excessive, adjust the air dampers in the following procedure.

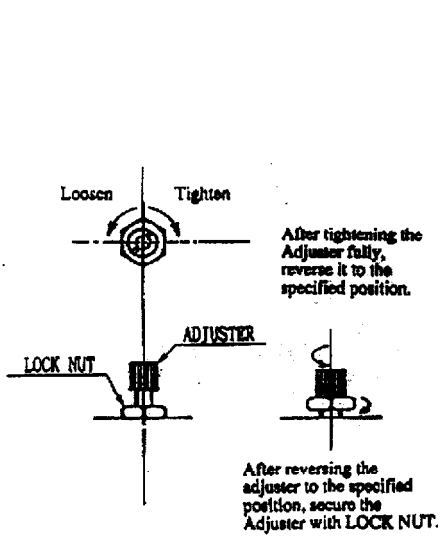
WARNING!

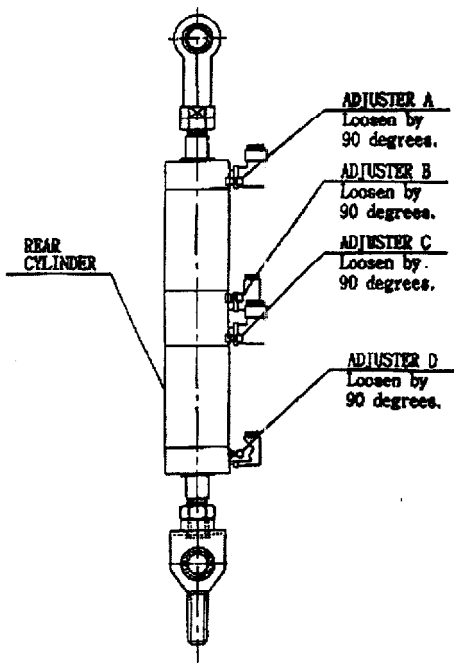
After turning power off, close the main cock to start working. Starting work without closing main cock can cause serious injury.

STOP
IMPORTANT!

Make adjustments as specified. Adjusting in a manner not specified can cause malfunctions and parts damage.

Turn off power, and turn the circuit protector inside the front cabinet OFF.
Remove the rear lid from the mechanism base and close the main cock.
Remove the lid right.
Tighten the lock nut of the rear cylinder's adjuster fully to the bottom of the adjuster.
Loosen the A,B, C and D adjusters by 90 degrees from the fully tightened point.
Tighten the lock nut so the adjuster will not rotate.
After making adjus1ents, play the game, and check to see that the adjustments are made correctly.


Loosen
Tighten
After tightening the Adjuster fully, reverse it to the specified position.
ADJUSTER
LOCK NUT
After reversing the adjuster to the specified position, secure the Adjuster with LOCK NUT.



In order to prevent an electric shock, be sure to turn power off before performing work and touching interior parts of the machine.
Be careful so as not to damage wiring and cause an electric shock or short circuit.

Do not expose the game board without good reason. In this product, setting changes are made during the test mode. The game board need not be operated. Use the game board as is, with the settings made at the time of shipment.

TAKING OUT THE SHIELD CASE ASSEMBLY

When a problem occurs on the game board, remove the shield case assembly for return to the factory by using the following procedure:

Turn the main switch off.
The shield case is inside the cabinet, accessible from the locked door on the right side.
Remove two tamperproof screws using the tool provided to you. Unlock the side door and remove.
Remove connectors to filter board on shield case assembly and remove 4 wood screws that secure the shield case to the cabinet. Remove the shield case from the cabinet, and exercise care not to drop the shield case when doing so.
Place shield case securely in the re-useable box provided to you with the game.

Do not open the shield case for any reason. Any inspection or repairs to the game board must be performed at the Sega facility only. Removing the game board from the shield case may cause your factory warranty to be voided.

FOR REFERENCE ONLY

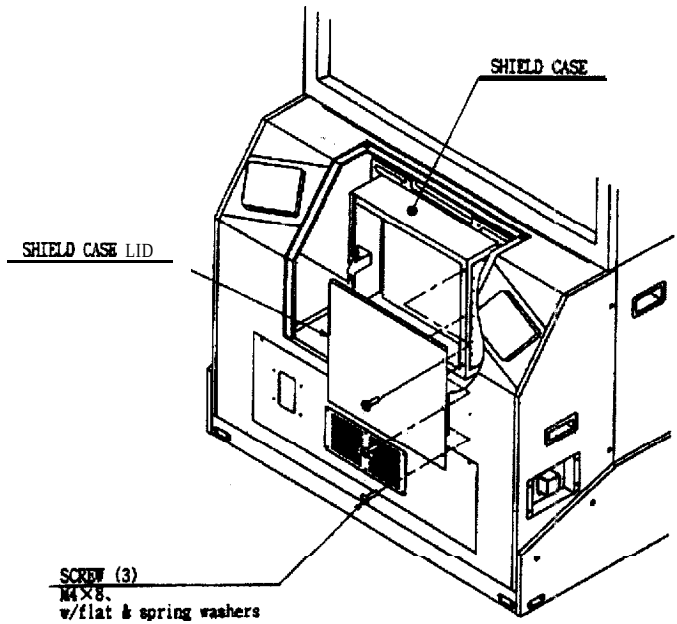
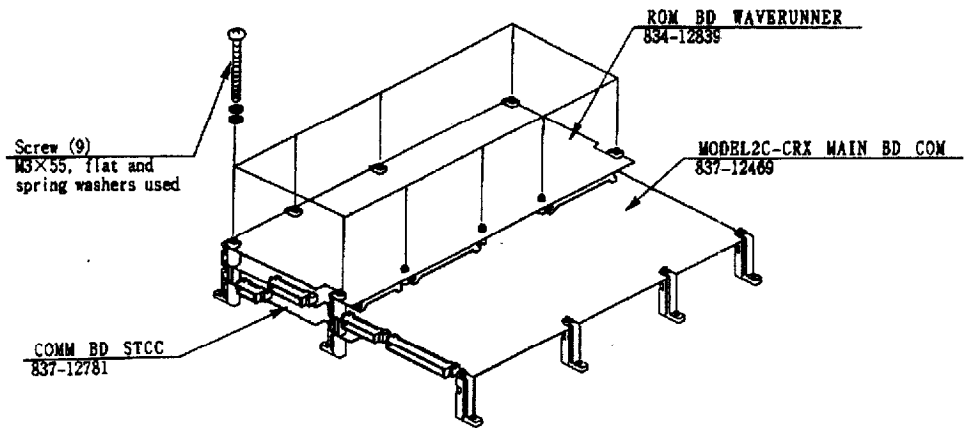


FIG. 18 b

18—2 COMPOSITION OF GAME BOARD

GAME BD WAVERUNNER (833-12838)



GAME BOARD
SERVICE RECORD

This page is provided for your use in tracking repairs or replacements of your Sega game PCBs and assemblies. This information can help provide a service history for your game should it ever be sold or transferred.

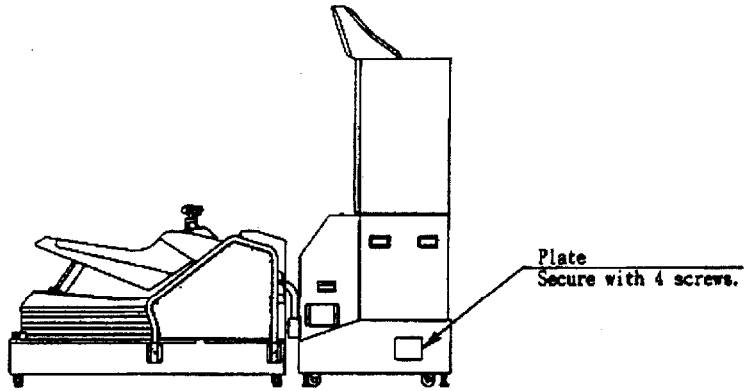
DATE	BOARD ASSY NO.	PCB SERIAL NO.	RMA NO.

COMMUNICATION PLAY

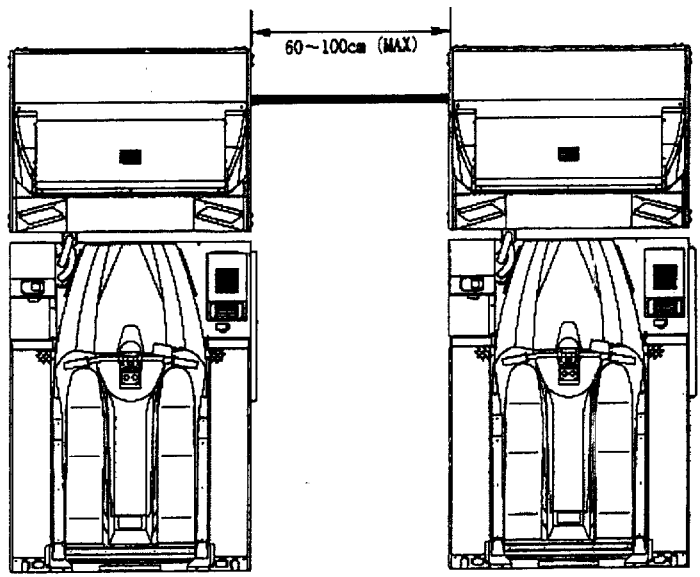
The Wave Runner allows up to 4 seats to enjoy communication play. For communication play, communication cable connection and game assignments are needed.

When linking a number of machines, be sure to supply sufficient power for the corresponding number of machines. The per unit standard voltage/amperage is 100~120V/10A and 200~240v/5A.

Remove the plate from the side of the PTV base where the connection cable passes.



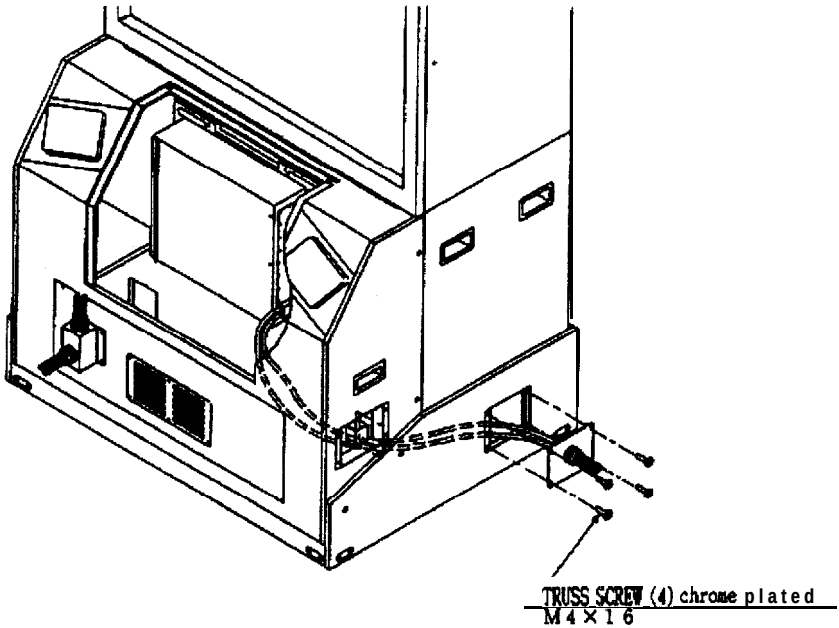
Align the machines to be linked in a position no more than 60 to 100 cm apart.



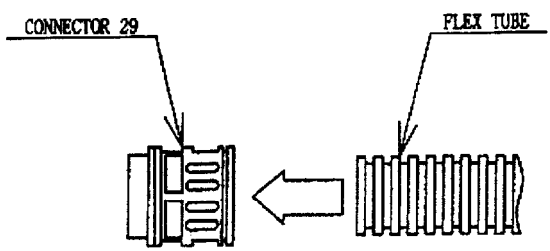
STOP
IMPORTANT!

THE COMMUNICATION CABLE IS A VERY FRAGILE FIBER OPTIC CABLE. EXCESSIVE BENDING WILL DAMAGE THE CABLE. HANDLE IT WITH CARE.

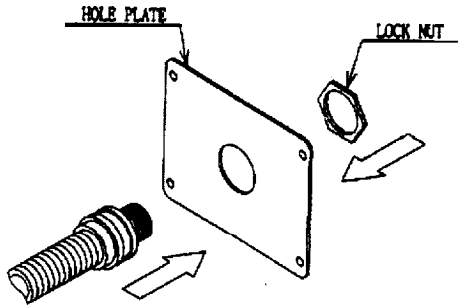
Open the service door on the front cabinet and connect the communication cable to the filter board of the shield case.



① Inserting the FLEX TUBE into Connector 29 allows for "one touch" assembling (FIG. 20.2 b).



Insert the connector into the hole platehole and fasten with the accesory lock nut.



Pass the communication cable through the flex tube.
Insert the communication cable from the square hole on the side of the PTV and connect to the shield case filter board. Depending on the number of machines to be linked, connect the communication cable as shown.
Secure the hole plate with the 4 truss screws.

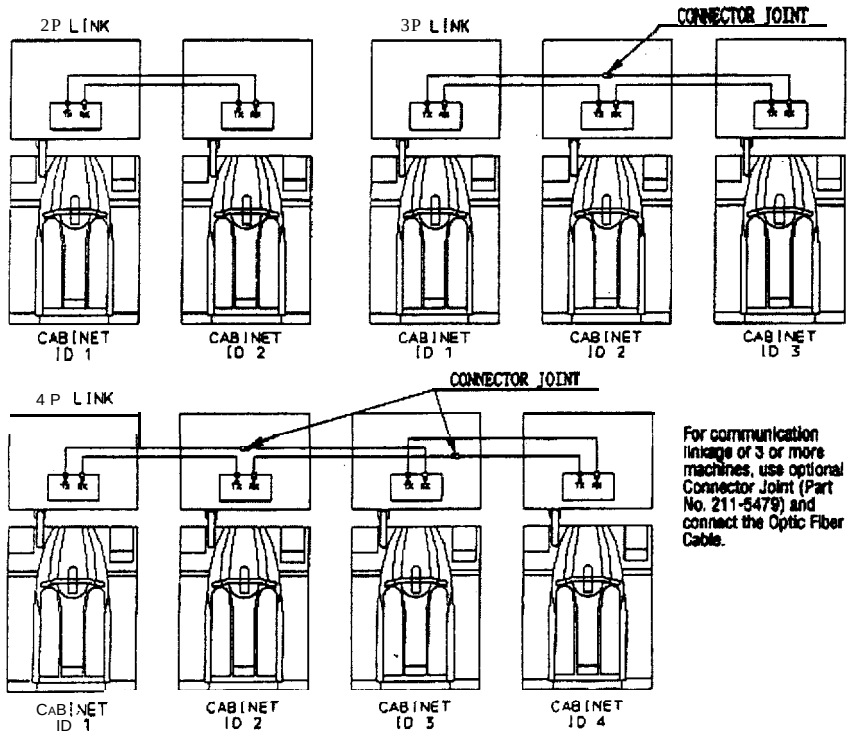


FIG. 20. 2 d

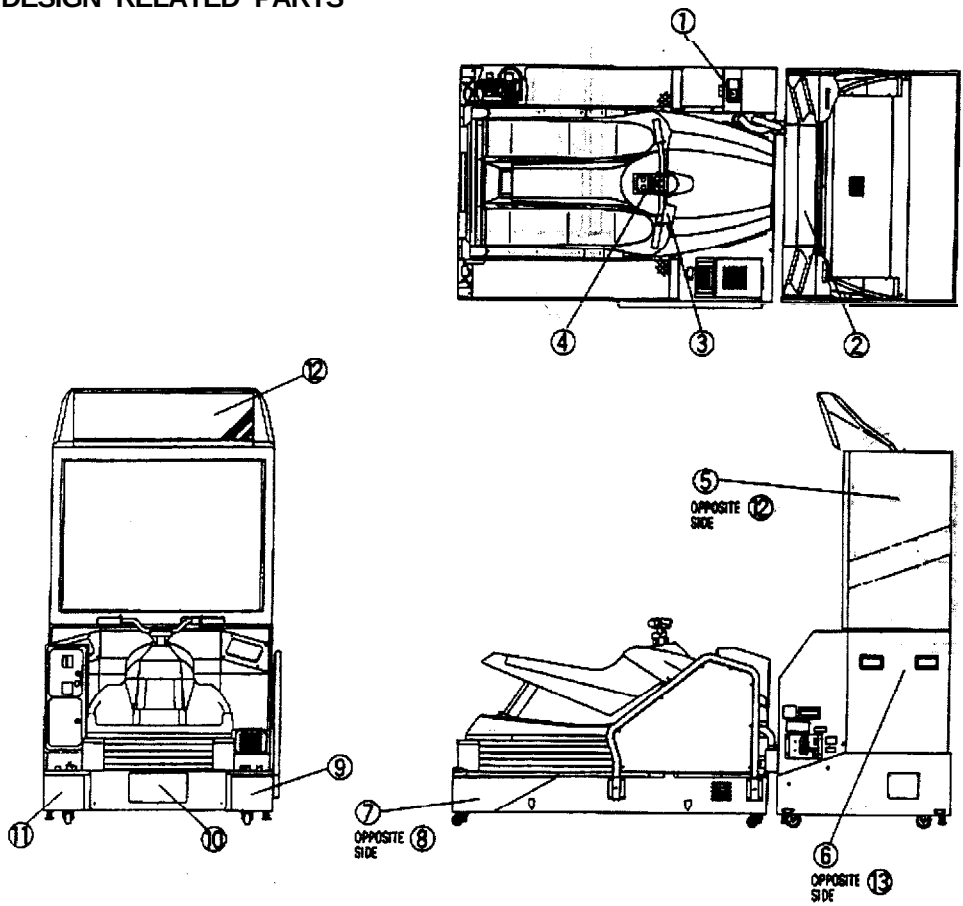
During interactive play, if communication is interrupted due to any reason, the game will be interrupted, with the network check screen appearing.

For interactive play, the settings of game assignments need to be changed. First, determine one machine as Master, and set the network type to Master. Set the other machines to Slave. Then, set cabinet IDs for all machines, in sequential order, starting from the left most machine. (1, 2, 3, 4)

Be sure to have all machines exit from the test mode and have the normal mode return. Network check starts, and after a while, the game mode appears on the screen. At this time, the slave machine's settings are compulsorily unified to those of the master unit.

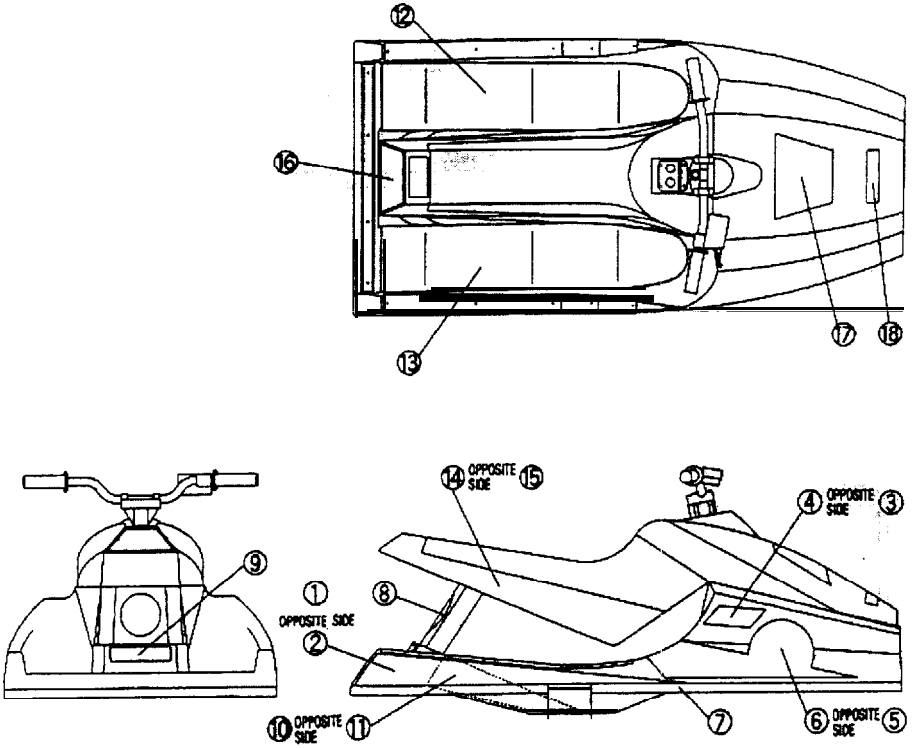
Exiting from the test mode causes the network check to be performed automatically. During this time, all of the linked units will not allow the game to be played in the normal status. Therefore, be sure that none of the games are in play when entering the test mode, and conversely, if any one unit is in the test mode, make sure none of the other games is in play.

DESIGN RELATED PARTS



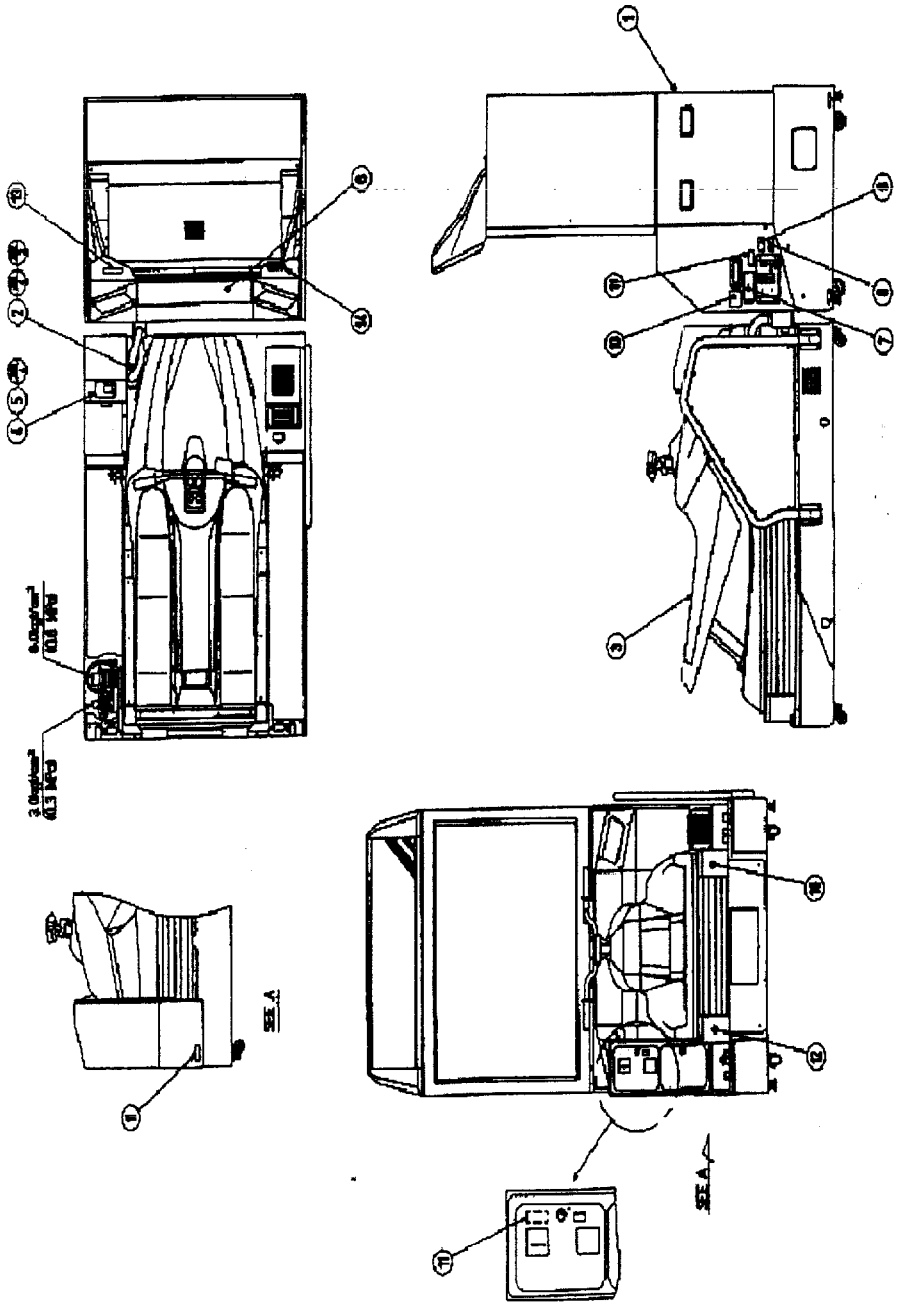
ITEM NO.	PART No.	DESCRIPTION
	421-7308-	DENOMINATION SHEET
2	422-6599-01	PLAY INSTR STICKER MJT ENG
3	MJT-3605-B	STICKER ACCEL COVER
4	MJT-3007-B	START VIEW ST
5	421-9165	STICKER SIDE TV R MJT
6	421-9167	STICKER SIDE TV R LOWER MIT
7	MJT-3023	BASE SIDE R STICKER
8	MJT-3022	BASE SIDE L STICKER
9	MIT-3021	BASE BACK SIDE R ST
10	MJT-3019	BASE BACK CENTER MJT
11	MIT-3020	BASE BACK SIDE
12	421-9164	STICKER SIDE TV L MJT
13	421-9166	STICKER SIDE TV L LOWER MAT

DESIGN RELATED PARTS



ITEM NO.	PART No.	DESCRIPTION
1	MIT-3001-H	W.RUNNER ST SIDE BACK L
2	MJT-3001-J	W.RUNNER ST SIDEBACK R.
3	MIT-3001-K	STNO.IO1 L
4	MJT-3001-L	ST NO.101 R
5	MJT-3001-M	ST SWORD FISH L
6	MIT-3001-N	ST SWORD FISH R
1	MJT-3001-P	BUMPER LINE ST
8	MJT-3001-Q	PROJECT TEAM ST
9	MJT-3001-R	YAMAHA W.R BACK
10	MJT-3001-S	STEP GUARD L
	MIT-3001-T	REAR LJD
11	MJT-3001-u	STEP GUARD R
12	MJT-3001-v	FOOT MAT L
13	MIT-3001-w	FOOT MAT R
14	MJT-3002-D	SEAT BASE SIDE R
15	MJT-3002-C	SEAT BASE SIDE
16	MJT-3002-E	TAIL ST
17	MJT-3004-E	RACING RUNABOUT
18	STC-1605-D	STICKER SEGA LOGO

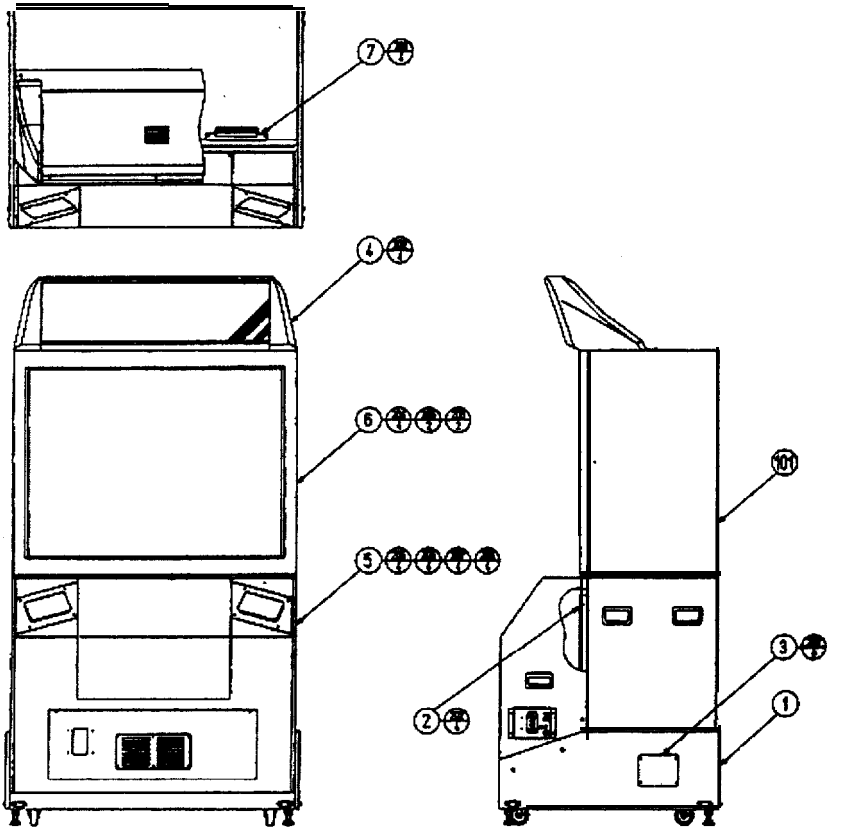
TOP ASSEMBLY, WAVE RUNNER



TOP ASSEMBLY WAVE RUNNER

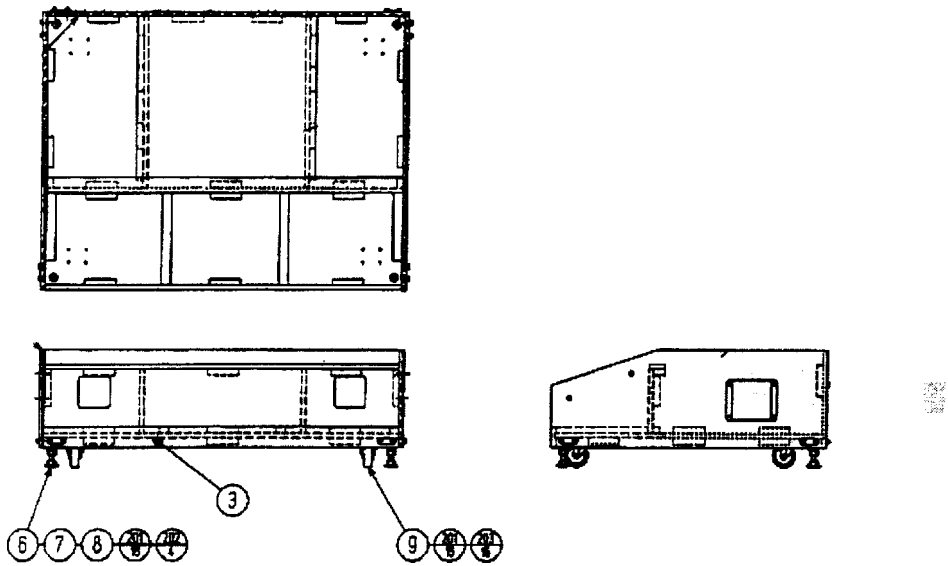
ITEM NO.	PART NO.	DESCRIPTION
1	MJT-0500	ASSY PTV
2	MJT1-0600	ASSY TUBE
3	MJT-3000	ASSY REAR CABI
4	DYN-0011	DENOMI PLATE W/O ORIGINAL
	DYN-0010	DENOMI PLATE
5	42 L-7308	DENOMINATION SHEET ~
6	422-0599-01	PLAY INSTR STICKER MJT ENG
8	421-6594-9 1	STICKER CERTIFICATE
10	421-7987	STICKER ELEC SPEC
11	421-7988-91	STICKER SERIAL NUMBER
12	MJT-0004	SHIPPING BRKT L
15	SGM-4357	POLY COVER 1600x1300x1050
16	MIT-0005	SHIPPING BRKT R
17	SGM-4390	WLY COVER 1150 X 400 X 650
201	000-T00416-OB	M SCR TH BLK M4X16
202	000-T00408-OB	M SCR TH BLK M4X8
203	000-T00408-OC	M SCR TH CRM M4X8
401	601-6604-70	CARTON BOX 70
402	420-6239-01	OWNERS MANUAL WAVERUNNER ENG
403	SGM-2675	POLYETHYLENE BAG 240x370
404	220-5381	KEY MASTER FOR 220-5380
405	SGM-4111	KEY BAG
408	220-5373	VOL CONT B-SK
	220-5484	VOL CONT B-5K OHM
409	514-5036-7000	FUSE 6.4X30 7000MA 125V
410	090-0037	SEAL TAPE
411	600-6275-0500	ASSY FIBER CABLE 5 0500CM
412	310-5285-290100	FLEX TUBE 29-OIOOCM
413	3 lo-528629	CONN 29
414	MJT-0504	HOLE PLATE
415	600-6664-02	WIRE HARN EARTH W/LUG M6
I	MJT-0003	SHIF'PING BRKT REAR
/	000-P00525-W	M SCR PH W/FS M5X25
/	068441616	FLT WSHR 4.4-16X1.6
I	000-P00430-S	M SCR PH W/S M4X30
/	421-6690-01	STICKER 120V
I	421-6690-03	STICKER 220V
/	421-6690-05	STICKER 240 V
/	421-6690-06	STICKER 110V
/	421-6119-91	STICKER FCC
/	421-6120-91	STICKER SEGA USA
/	600-6618	AC CABLE CONNECT TYPE FOR EXP
	GPD-0002X	SHIPPING BRACKET

ASSY PTV (MJT-0500)



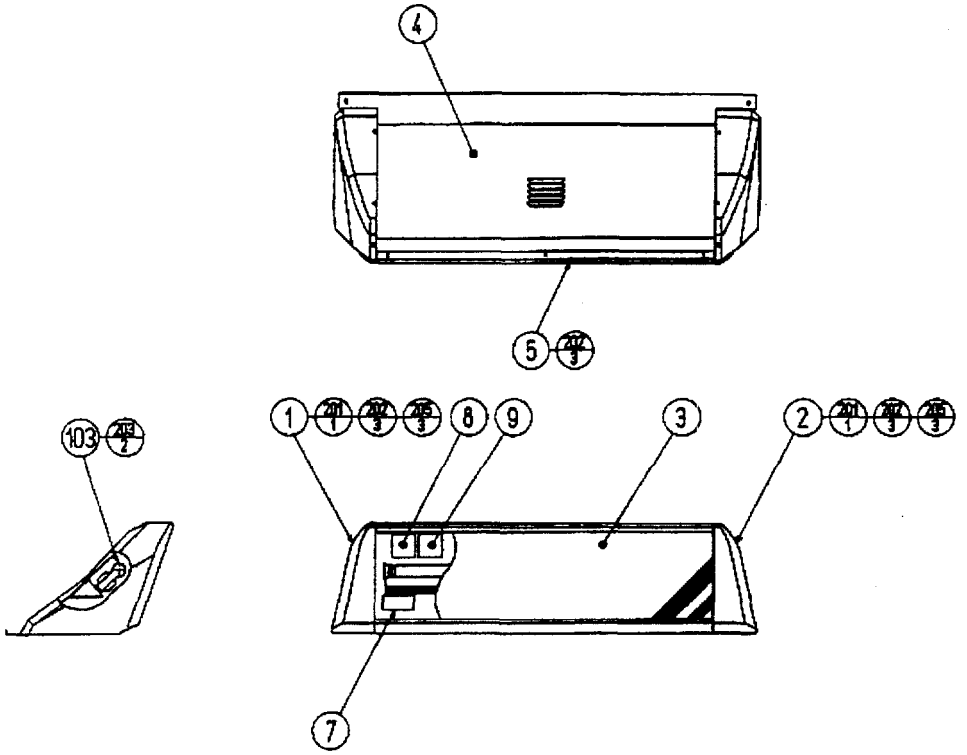
ITEM NO.	PART NO.	DESCRIPTION
	MJT-050 1	PTV BASE
2	MJT-0502	SIDE BRKT
3	MJT-0503	PLATE
4	MJT-0550	ASSY BILLBOARD
5	MJT-1000	ASSY FRONT CABINET
6	MGL-1150	ASSY MASK
7	RAL-0501	MASK HOLDER
101	2001-5265	PROJECTION DISPLAY MITSUBISHI
201	000-F00414	M SCR FH M4X14
202	000-P00516-W	M SCR PH W/FS M5X 16
203	000-T00420-OC	M SCR TH CRM M4X20
204	000-T00520-OB	M SCR TH BLK M5X20
205	000-T00525-OC	SCR TH CRM M5X25
206	068-552016-OC	WSHR CRM 5. 5-20X1. 6
207	000-T00640-OC	SCR TH CRM M6X40
208	068-652016-OC	WSHR CRM 6. 5-20 X 1. 6

PTV BASE (MJT-0501)



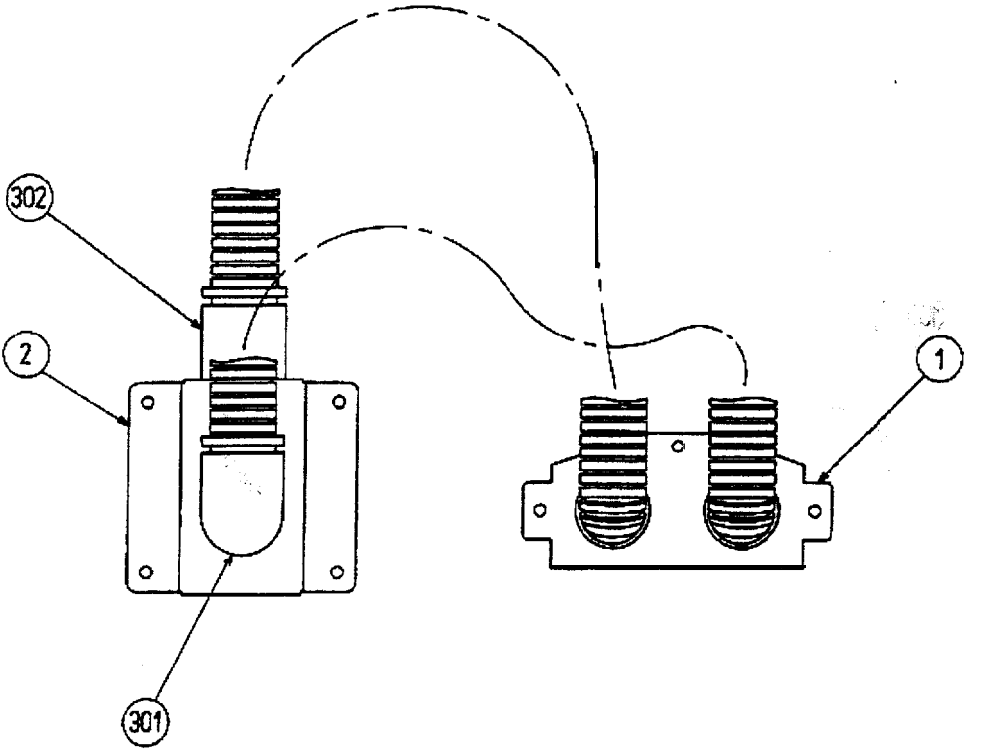
ITEM NO.	PART NO.	DESCRIPTION
6	ARC-1006	LEG BRACKET
7	117-5216	PLATE LEG BRACKET
8	60 I -5699X	LEG ADJ BLT M 16X 75
9	601-8704	CASTER 75
201	030-000630-SC	HEX BLT W/S CRM M6X 30
202	0%HO1600	HEX NUT M16
203	060-F00600	FLT WSHR M6

ASSY BILLBOARD (MJT1-0550)



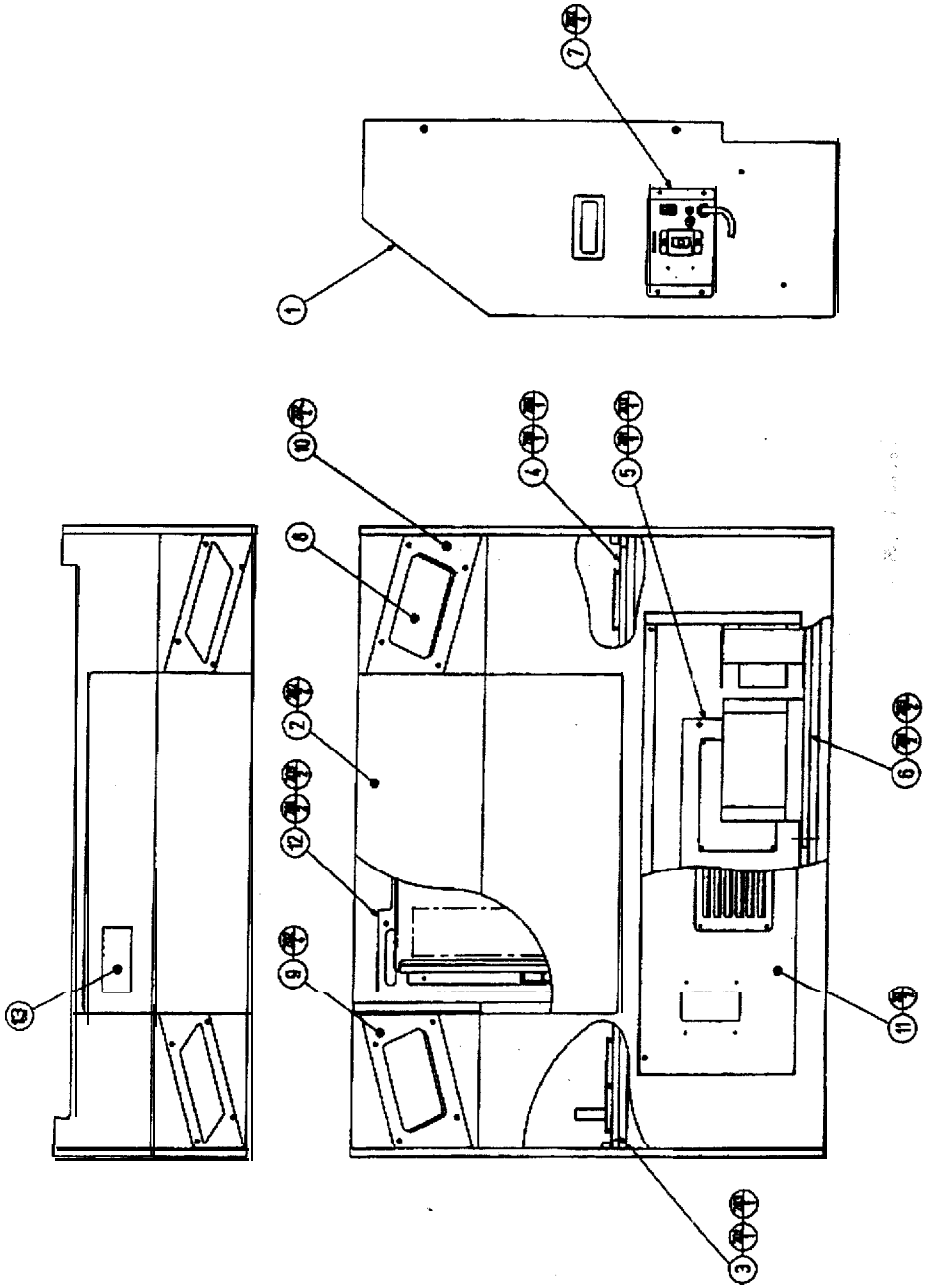
ITEM NO.	PART NO.	DESCRIPTION
1	MJT-0551	LEFT COVER
2	MJT-0552	RIGHT COVER
3	MIT-0553	BILLBOARD
4	ha-r-0554	BILLBOARD BOX
5	MIT-0555	BILLBOARD HOLDER
102	280-5009	CORD CLAMP 21
103		24" FIXTURE. 2ow LAMP
201	000-F00410	M SCR FH M4X10
202	000-T00408-OC	M SCR TH CRM M4X8
203	000-P00416-W	M SCR PH W/FS M4X16
205	068-441616-OC	FLT WSHR CRM 4.4-16X1.6
301	600-6790-089	WIRE HARN EXT FL

ASSY TUBE (MJT1-0600)



ITEM NO.	PART NO.	DESCRIPTION
1	MJT-0601	TUBE PLATE
2	MIT-0602	TUBE BRKT
301	600-6790-076	WIRE HARN DC TUBE
302	6001-6790-075	WIRE HARN AC TUBE

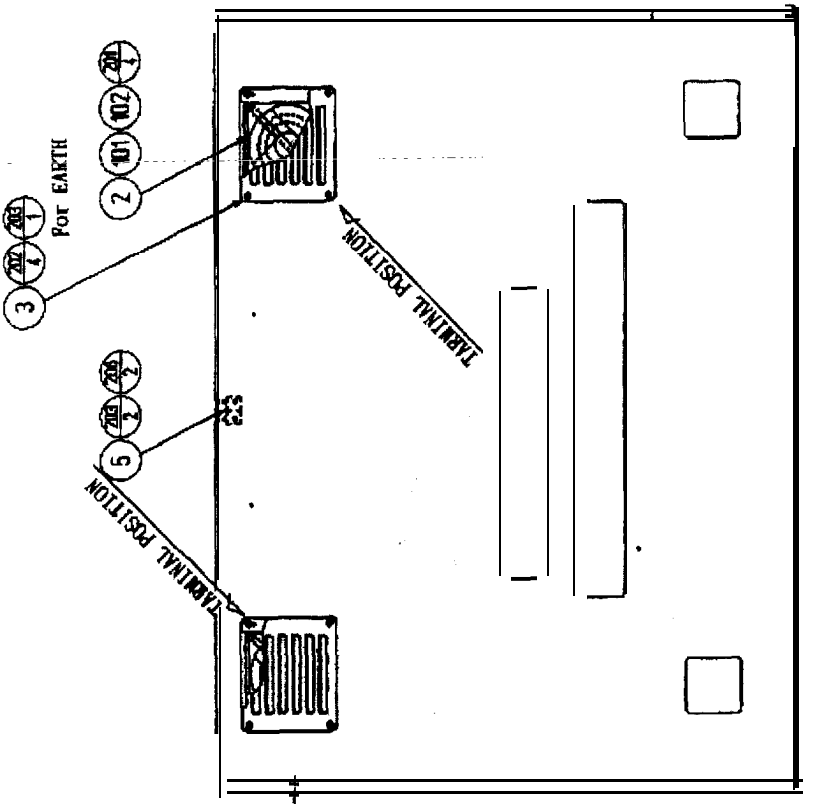
ASSY FRONT CABINET (MJT1-1000)

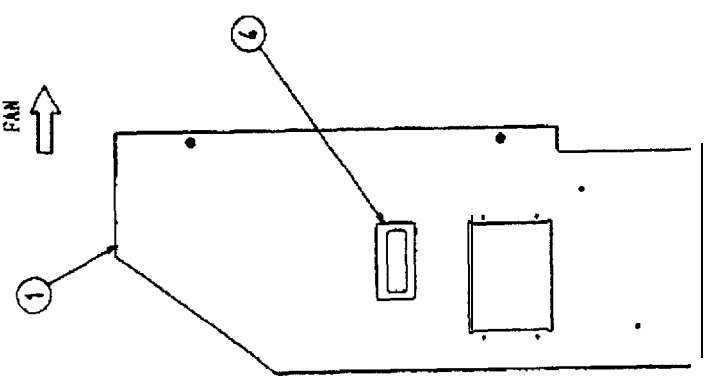


ASSY FRONT CABINET (MJT1-1000)

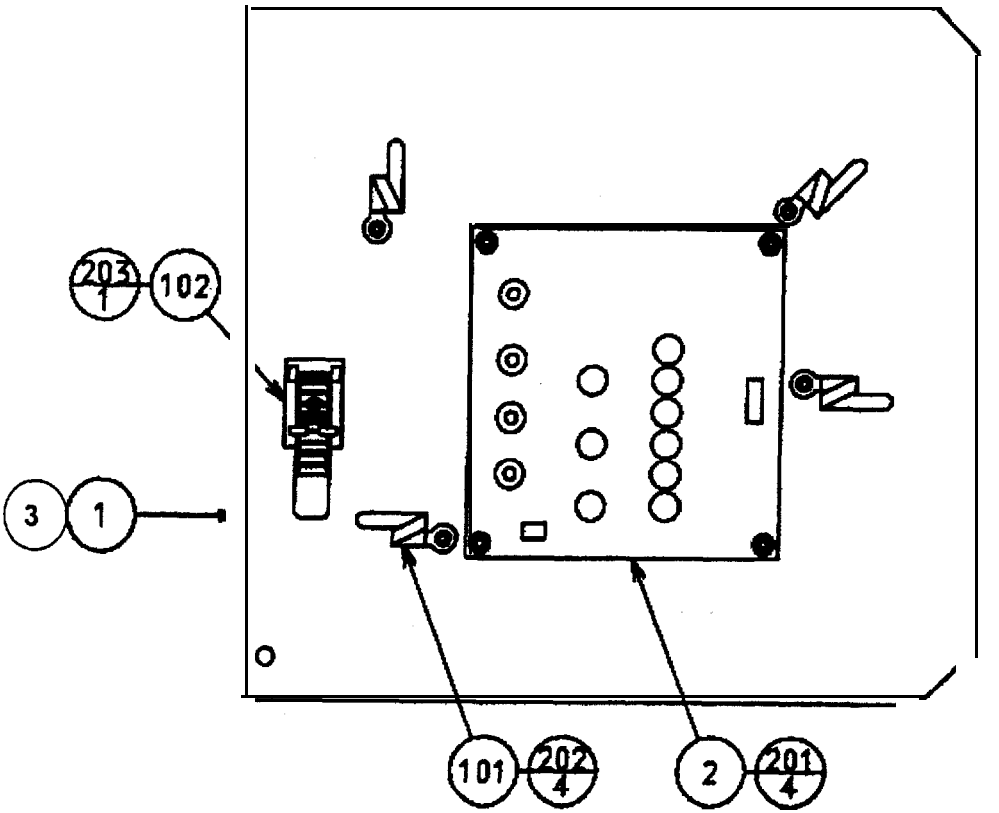
ITEM NO.	PART NO.	DESCRIPTION
	MJT-1001	ASSY SUB CABINET
2	MJT-1020	ASSY SERVICE LID
3	MJT1-1030	ASSY PWR AMP
4	MJT1-1040	ASSY BUFFER BD
5	Mm-1050	ASSY DRIVE BD
6	MJT1-1060	ASSY PWR SPLY
	MJT1-1070	AC UNIT
8	Mm-1080	ASSY SPEAKER
9	MJT-1082	SPEAKER COVER LEFT
10	MJT-1083	SPEAKER COVER RIGHT
	MIT-1090	ASSY LOWER LID
12	MJT-llOO	ASSY MAIN BD
13	440-WS0033-EG	STICKER W BD POWER OFF ENG
201	000-P00435-W	M SCR PH W/FS M4X35
202	000-T00420-OB	M SCR TH BLK M4X20
203	068-441616	FLT WSHR 4.4-16X1.6
204	000-P00408-W	M SCR PH W/FS M4X8
301	600-6790-029	WIRE HARN BNC
	MI-r-1200	ASSY AUTO XFMR
	MIT-1210	ASSY XFMR EXP

ASSY SUB CABINET (MJT-1001)



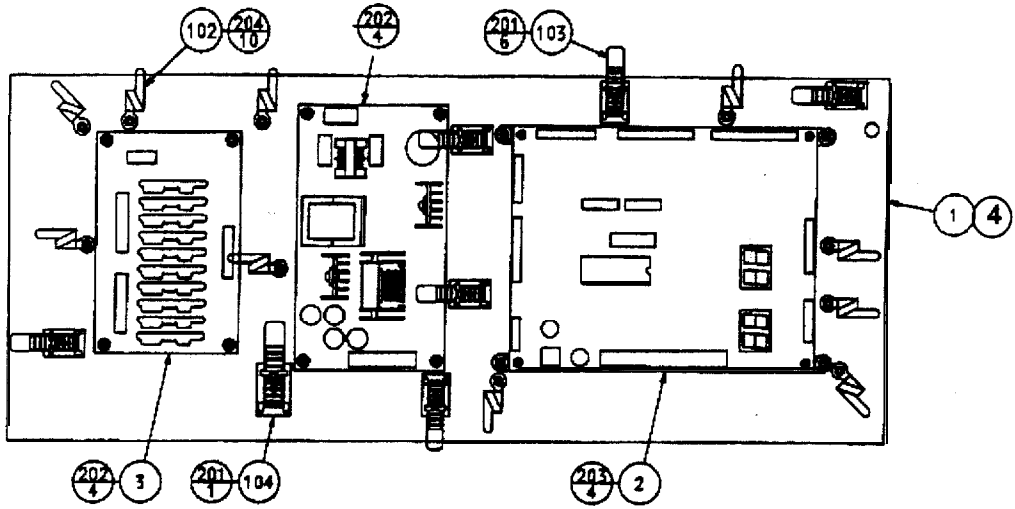


ASSY BUFFER BOARD (MJT-1040)



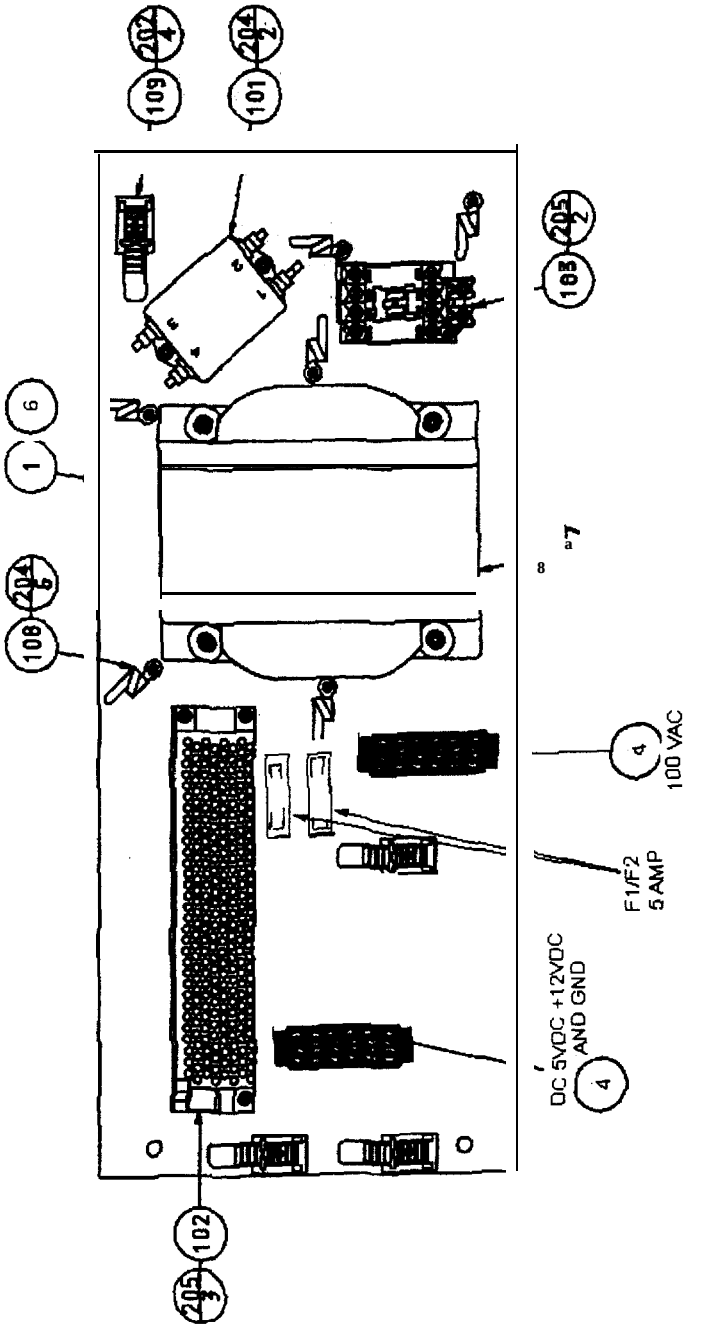
ITEM NO.	PART NO.	DESCRIPTION
1	MIT-1031	WOODEN BASE
2	839-0582	VPM BUFFER BD
3		METAL PLATE C-UL
101	2804419	HARNESS LUG
102	280-5009	CORD CLAMP 21
201	011-P00325	TAP SCR PH 3X25
202	011-T03512	TAP SCR TH 3.5X12
203	011-F00310	TkP SCR FH 3x10
301	600-6790-027	WIRE HARN BUFFER BD DC IN
302	600-6790-028-91	WIRE HARN BUFFER BDS RGB

ASSY DRIVE BOARD (MJT-1050)



ITEM NO.	PART NO.	DESCRIPTION
	MJT-1051	WOODEN BASE DRIVE
2	838-12801	DRIVE BD WAVERUNNER
3	8391-0619	SSR BD 10
4		METAL PLATE C-UL
101	4001-5286	SW REGU t5Vl. 5A +24V1. 5A
102	280-0419	HARNESS LUG
103	280-5008	CORD CLAMP 15
104	280-5009	CORD CLAMP 21
105	601-0460	PLASTIC TIE BELT 100MM
201	011-F00310	TAP SCR FH 3x10
202	011-P00325	TAP SCR PH 3X25
203	011-T00316	TAP SCR TH 3X16
204	011-T03512	TAP SCR TH 3.5X12
301	600-6790-o 14	WIRE HARN ASSY DRIVE BD AC
302	600-6790-015	WIRE HARN SSR BD OUT
303	600-6790-O 16	WIRE HARN SW REGU DC24V
304	600-6790-017	WIRE HARN DRIVE BD & SSR BD
305	600-6790-o 18	WIRE HARN DRIVE BD I/O IN
306	600-6790-019	WIRE HARN DRIVE BD A/D

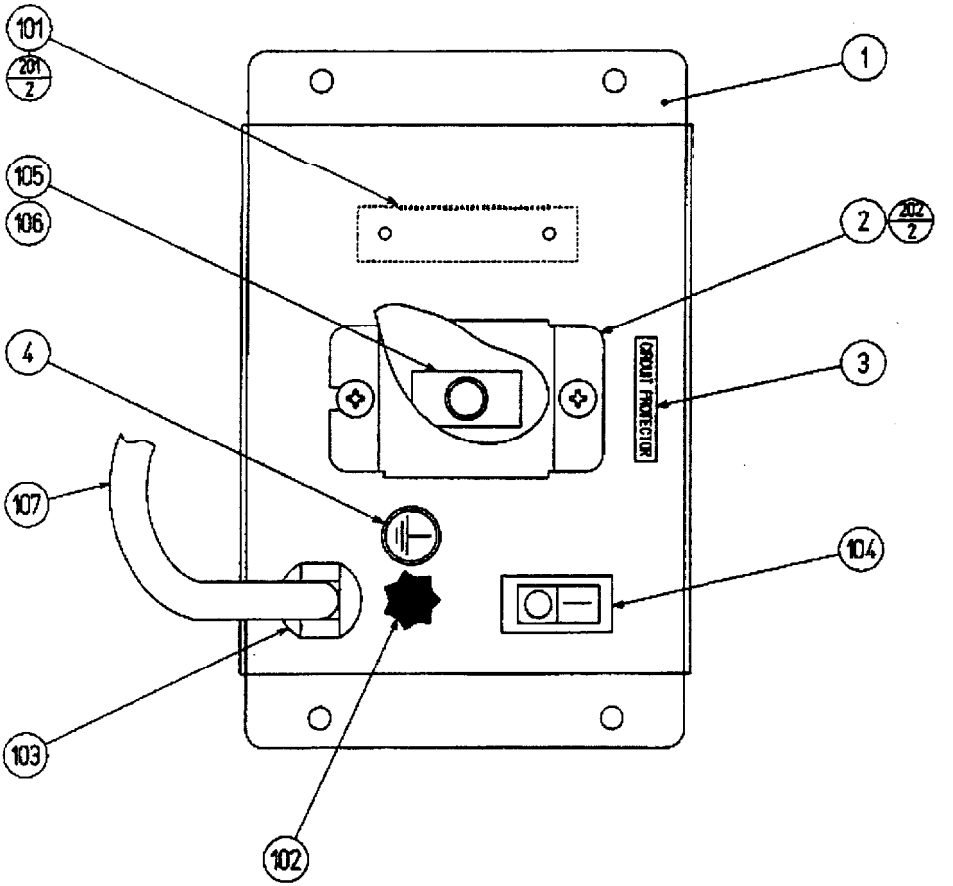
ASSY POWER SUPPLY (MJT1-1060)



ASSY POWER SUPPLY (MJT1-1060)

ITEM NO.	PART NO.	DESCRIPTION
	MJT-1061	WOODW BASE PWR SPLY
4	TB100-06	MAGNUM TERMINAL 6P 20A
		FUSE HEIDER LITTLE FUSE 352
101	270-5026	NOISE FILTER 20A
102	4001-5306-01	SW REGU t5V12A12Vl. 5A-5V1A
103	450-5 126	MAGNET CONTACT S-NIOCX
	450-5133	MAGNET CONTACT S-NIOCX AC200V
	450-5 134	MAGNET CONTACT S-NIOCX AC230V
	450-5 126	MAGNET CONTACT S-NIOCX AC 120V
107	560-5260	PWR XFMR IOOV6. 5A 12. 5V6A
	560-5261	PWR XFMR IOOV6. 5A12. 5V6A
108	280-0419	HARNESS LUG
109	280-5009	CORD CLAMP 2 1
110	601-0460	PLASTIC TIE BELT IOOMM
201	000-P00516-W	M SCR PH W/FS MSX16
202	011-F00310	TAP SCR FH 3X1O
203	011-P00325	TAP SCR PH 3X25
204	011-T03512	TAP SCR TH 3.5X12
20.5	011-T03516	TAP SCR TH 3.5X16
206	068-552016	FLT WSHR 5. 5-20X1. 6
301	600-6790-001	WIRE HARN PWR SPLY AC
302	600-6790-002	WIRE HARN M. C & N.
303	600-6790-003	WIRE HARN N. FILTER &
304	600-6790-004	WIRE HARN XFMR &
305	600-6790-005	WIRE HARN XFMR AC12.
306	600-6790-006	WIRE HARN AC FOR
307	600-6790-007	WIRE HARN SSR FOR
308	600-6790-008	WIRE HARN SSR & C. P
309	600-6790-009	WIRE HARN SSR 40A
310	600-6790-010	WJREHARNCONNBD
311	600-6790-011	WIRE HARN CONN BD
312	600-6790-012	WIRE HARN SW REGU
313	600-6790-013	WIRE HARN SW REGU

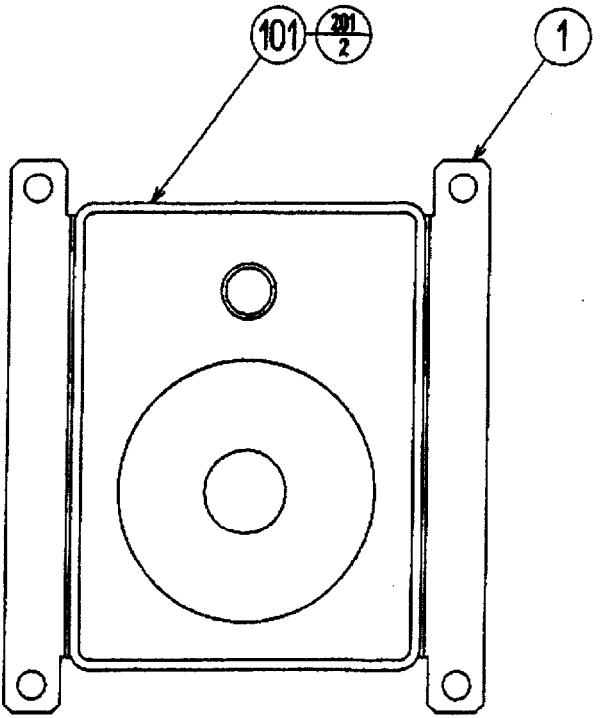
AC UNIT (MJT1-1070)



AC UNIT (MJT1-1070)

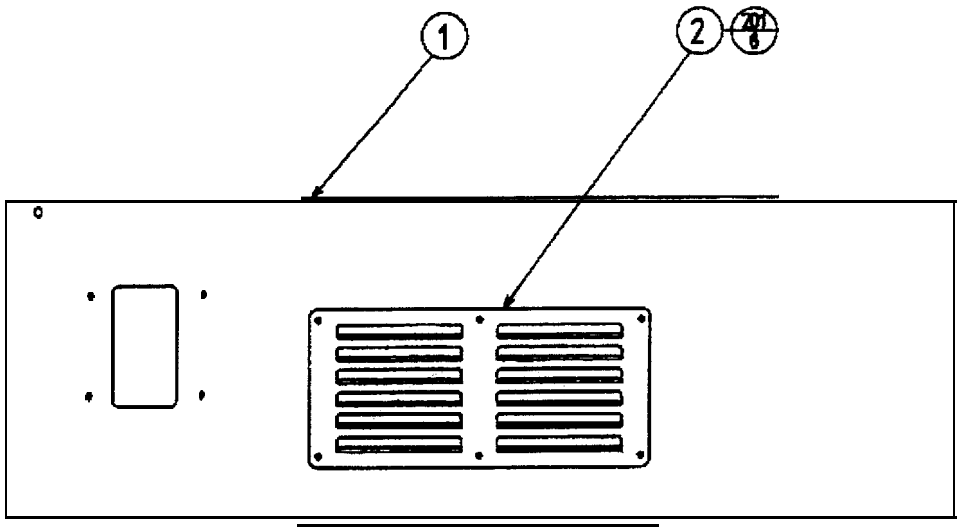
ITEM NO.	PART NO.	DESCRIPTION	NOTE
	RCT-1031	AC BRKT	
2	RCT-1032	C.P. COVER	
3	421-7468	STICKER C.P	
4	421-8202	STICKER EARTH MARK	
101	TB100-04	MAGNUM TERMINAL. 4P 20A	
102	280-0417	TERMINAL BINDING POST BLACK	
103	280-5134-6N34	BUSHING STRAIN RELIEF 6N34	
	280-5134-6N4	BUSHING STRAIN RELIEF 6N4	
104	509-5453-V-B	SW ROCKER J8 V-B	
105	512-5025-15	CIRCUIT PROTECTOR 15A	
106	5 12-5030	PLATE	
107	600-5843-25	CA & PLUG ASSY 15A WI-F- L=2.5M	
	600-0110	CABLE & PLUG ASSY W/EARTH	
108	209-0032	CONN CLOSED END LARGE	
109	310-5029-H20	SUMITUBE FH 20MM	
110	280-5009	CORD CLAMP 21	
111	601-0460	PLASTIC TIE BELT 100MM	
201	000-P00412-S	M SCR PH W/S M4X 12	
202	000-T00408-OB	M SCR TH BLK M4 X 8	
301	600-6568-01	WJREHARNACUNIT	
302	600-6790-079	WIRE HARN EARTH AC UNIT 2P	
303	600-6790-080	WIRE HARN EARTH AC UNIT 4P	
	211-0167	TERM	

ASSY SPEAKER (MJT-1080)



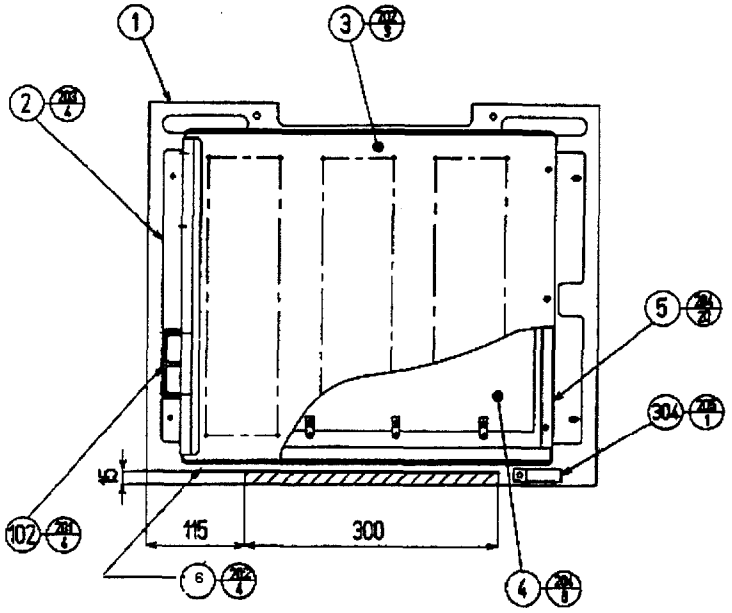
ITEM NO.	PART NO.	DESCRIPTION
1	MJT-1081	SPEAKER BRKT
101	130-5096	ASSY SERVO SPEAKER BOX
201	000-P00512-W	M SCR PH W/FS M5X12
301	600-6790-087	WIRE HARN

ASSY LOWER LID (MJT-1090)



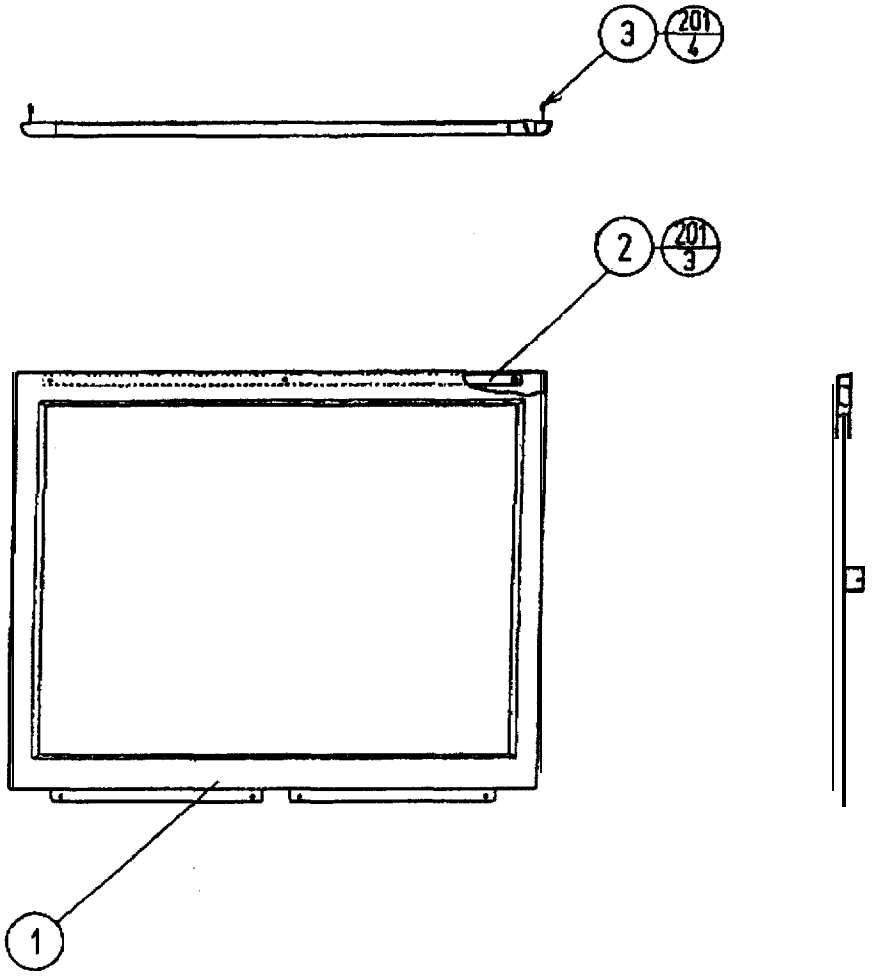
ITEM NO.	PART NO.	DESCRIPTION
1	MJT-1091	LOWER LID
2	DYN-1021	TWIN AIR VENT
201	000-T00412-OB	M SCR TH BLK M4X 12

ASSY MAIN BOARD (MJT1-1100)



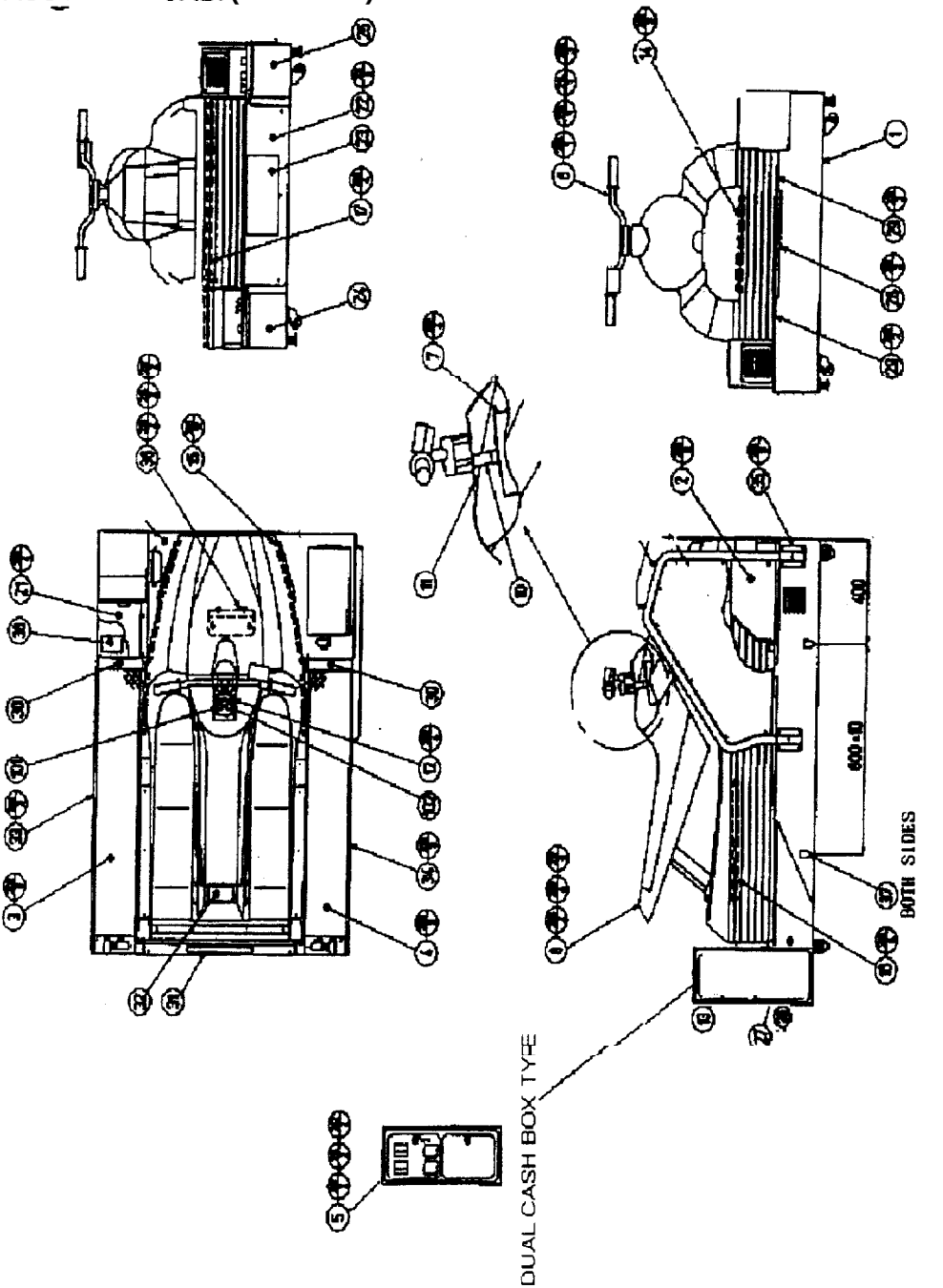
ITEM NO.	PART NO.	DESCRIPTION
1	MJT-1101	WOODEN BASE MAIN
2	105-52 18	SHIELD CASE
3	105-5219-91	SHIELD CASE LID
4	833-12838	GAME BD WAVERUNNER
5	839-0924	FLT BD B-CRX MJT
6		METAL PLATE. C-UL
101	209-0023	CONN CLOSED END
102	260-0055	FAN MOTOR DC5V
103	280-5009	coRDCLAMP
104	280-5275-SR10	CORD CLAMP SR10
105	601-0460	PLASTIC TIE BELT 100MM
201	000-P00330-W	M SCR PH W/FS M3X30
202	000-P00408-W	M SCR PH W/FS M4X8
203	000-P00412-W	M SCR PH W/FS M4X12
204	010-P00308-F	S-TITE SCR PH W/F M3X8
205	011-T03512	TAP SCR TH 3.5X12
301	600-6502-13	WIRE HARN DC FAN
302	600-6790-020	WIRE HARN MAIN BD DC IN A
303	600-6790-02 1	WIRE HARN MAIN BD DC IN B
304	600-6790-022-91	WIRE HARN MAIN BD RGB
305	600-6790-023	WfRE HARN MAIN BD AUDIO
306	600-6790-024	WIRE HARN MAIN BD DC OUT
307	600-6790-025	WIRE HARN MAIN BD I/O
308	600-6790-026	WIRE HARN MAIN BD A/D

ASSY MASK (MGL-1150)



ITEM NO.	PART NO.	DESCRIPTION
1	MGL- 1102	TV MASK
2	MGL-1151	SLIT PLATE
3	MGL- 1152	MASK SIDE HOLDER
201	012-F00408-OB	TAP SCR FH BLK M4X 8
202	000-F00410	M SCR FH M4 X 10

ASSY REAR CABI (MJT-3000)



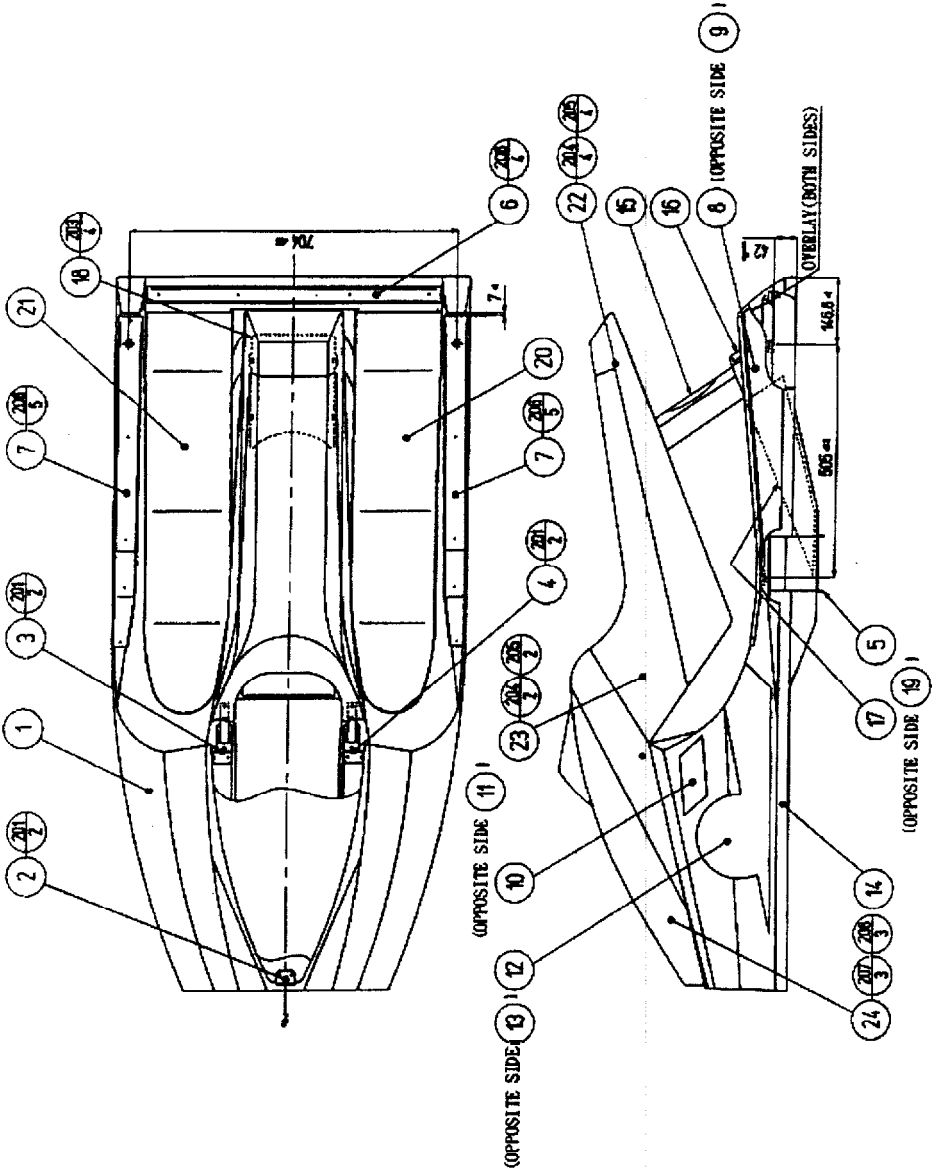
ASSY REAR CABI (MJT-3000)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	MJT-3100	ASSY MECHA BASE	
2	MJT1-3320	ASSY LID	
3	MJT-3340	ASSY LID LEFT	
4	MJT-3360	ASSY LID RIGHT	
5	MJT-3500	ASSY COIN CHUTE TOWER	
6	MJT1-3600	ASSY HANDLE MECHA	
7	MJT-3650	ASSY CENTERING MECHA	
8	MJT-3001	MAIN BODY	
10	MJT-3005	COLLAR	
11	MJT-3006	SLIDE PLATE	
12	MJT-3007	SW PLATE	
13	MJT-3009	BELLOWS	
14	MJT-3010	BELLOWS STOPPER FRONT	
15	MJT-3011	FELLOWS STOPPER A	
16	MJT-3012	BELLOWS STOPPER B	
17	MIT-3013	BELLOWS STOPPER REAR	
20	MIT-301 6	TUBE LID	
21	MJT-3017	CONNECT LID	
22	MJT-3018	REAR LID	
23	MJT-3019	BASE BACK STICKER MJT	
24	MIT-3020	BASE BACK SIDE L ST	
25	MIT-302 1	BASE BACK SIDE R ST	
26	MIT-3022	BASE SIDE L STICKER	
27	MIT-3023	BASE SIDE R STICKER	
28	MJT-3024	BELLOWS BRKTFRONT	
29	MJT-3025	BELLOWS BRKTA	
30	440-WS0082-EG	STICKER W BASE A ENG	
31	440-CS0083-EG	STICKER C BASE B ENG	
32	440-CS0084-EG	STICKER C SEAT END ENG	
33	m-3029	SASH L	
34	MJT-3030	SASH R	
35	MIT-303 1	PIPE HOLDER	
36	MJT-3032	FRAME BRKT	
37	421-8885	STICKER CAUTION FORK	
38	440-WS0002XEG	STICKER W POWER OFF ENG	
101	509-5764	PUSH BUTION SW 1 T GREEN W/LAMP	
102	509-0161	SW PB TYPE 1T YEL W/LAMP	
201	000-T00412-OB	M SCR TH BLK M4X12	
202	000-T00412-OC	M SCR TH CRM M4X12	
203	000-T005 12-OB	M SCR TH BLK M5X12	
204	000-T005 12-OC	M SCR TH CRM M5X12	
205	060-F01800-OB	FLT WSHR BLK M18	
206	020-001020-OZ	HEX SKT CAP SCR BLK OZ M10X20	
207	030-000820-S	HEX BLT W/S M8X20	
208	030-001025-S	HEX BLT W/S M10X25	
209	030-00 1060-s	HEX BLT W/S M10X60	
210	030-00 1070	HEX BLT M10x70	
211	03 1-000620-OB	CRG BLT BLK M6X20	

ASSY REAR CABI (MJT-3000)

ITEM NO.	PART	DESCRIPTION
212	050-F00600	FLG NUT M 6
213	060-FO1000-OB	FLT WSHR BLK Ml0
214	060-SO1000-OB	SPR WSHR BLK Ml0
215	068-441616-OC	FLT WSHR CRM 4.4-16X1.6
217	068-A52820	FLT WSHR 10.5-28X2
218	FAS-300001	HEX BLT CRM W/FS M8X20
301	600-6790-07 1	WIRE HARN START & VIEW
302	600-6790-086	WIRE HARN EARTH TO ACCBL

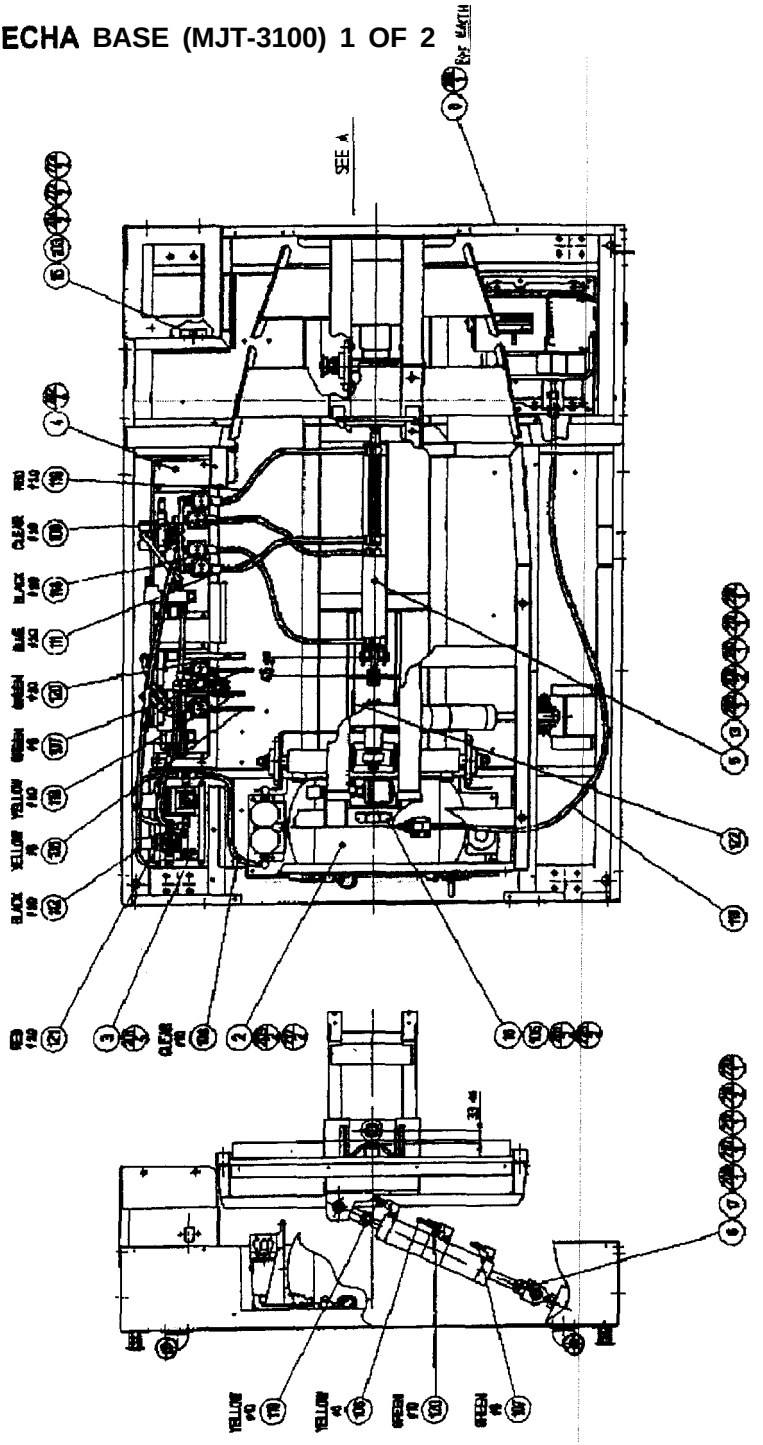
MAIN BODY (MJT-3001)



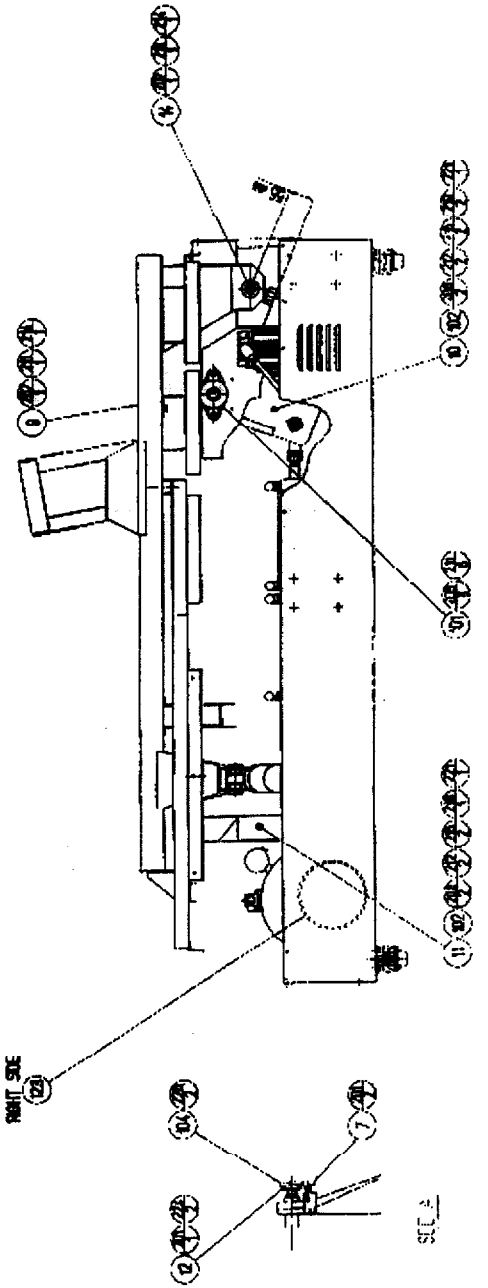
MAIN BODY (MJT-3001)

ITEM NO.	PART NO.	DESCRIPTION
	MJT-3001-A	MAIN BODY BLANK
2	MJT-3001-B	FRONT COVER HOLDER A
3	MJT-3001-c	FRONT COVER HOLDER B
	MJT-3001-D	FRONT COVER HOLDER C
5	Ml-I-3001-E	JOINT FRAME
6	MJT-3001-F	REAR GUARD
	MJT-3001-G	SIDE GUARD
8	MJT-3001-H	W.RUNNER ST SIDEBACK L
9	MJT-3001-J	W. RUNNER ST SIDEBACK R
10	MJT-3001-K	ST NO. 101 L
11	MJT-3001-L	ST NO. 101 R
12	MJT-3001-M	ST SWORD FISH L
13	MJT-3001-N	ST SWORD FISH R
14	MJT-3001-P	BUMPER LINE ST
15	MJT-3001-Q	PROJECT TEAM ST
16	MJT-3001-R	YAMAHA W. R BACK ST
17	MJT-3001-s	STEP GUARD L
18	MJT-3001-T	REAR LID
19	MJT-3001-u	STEP GUARD R
20	MJT-3001-v	FOOT MAT L
21	MJT-3001-W	FOOT MAT R
22	Mm-3002	SEAT BASE
23	Mm-3003	SEAT
24	MIT-3004	FRONT COVER
201	047-PA4010-4	RVT OPEN TYPE AL 4X10.4
203	000-T00416-OB	M SCR TH BLK M4X16
204	030-000820-S	HEX BLT W/S M8X20
205	068-852216	FLT WSHR 8.5-22X1.6
206	047-PA3217-0	RVT OPEN TYPE AL 3.2X17.0
207	000-T00520-OB	M SCR TH BLK M5X20
208	068-552016-OB	FLT WSHR BLK 5. 5-20 X 1.6

ASSY MECHA BASE (MJT-3100) 1 OF 2



ASSY MECHA BASE 2 OF 2



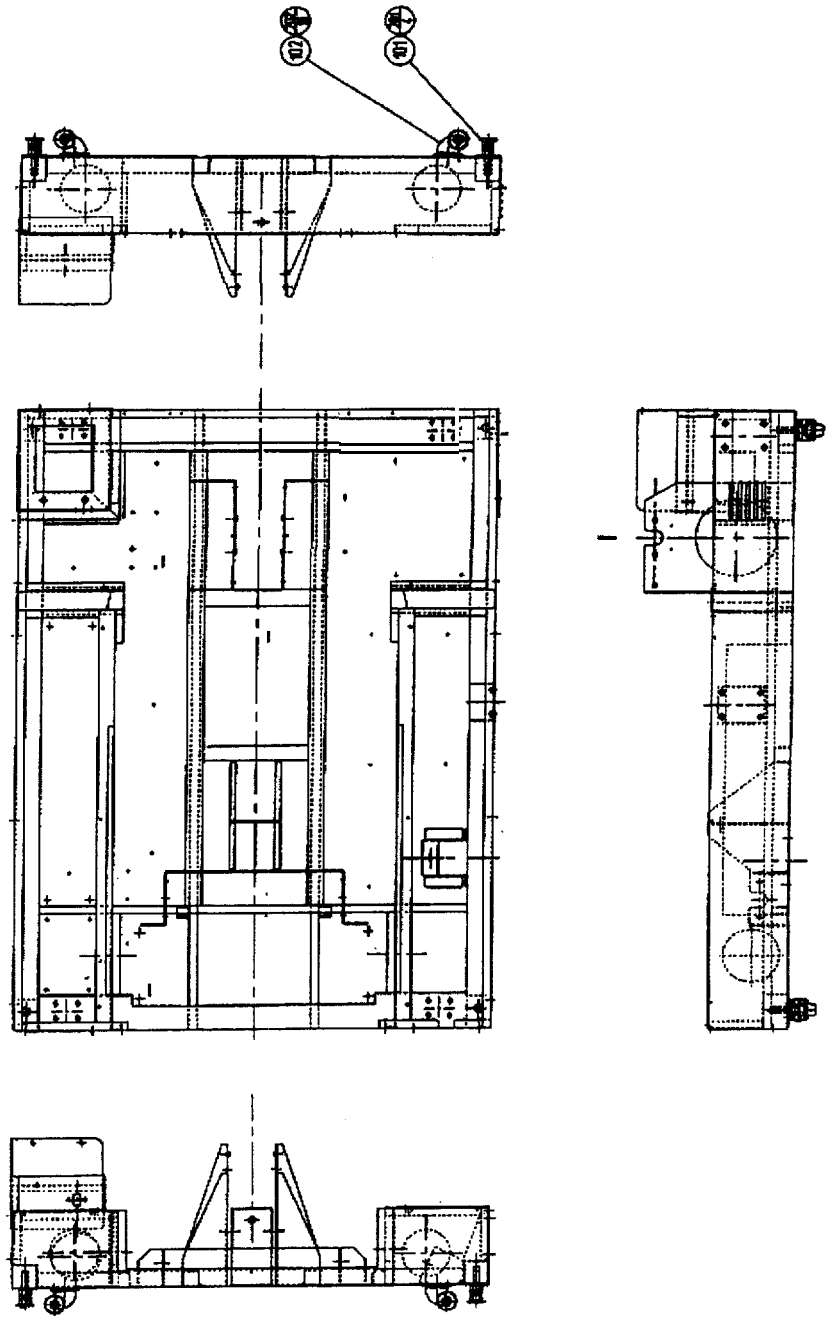
ASSY MECHA BASE (MJT-3100)

ITEM NO.	PART NO.	DESCRIPTION
2	Mm-3160	ASSY FILTER
3	MJT-3180	ASSY REGU
4	MIT-3200	ASSY VALVE
5	MJT-3220	ASSY FRONT CYLINDER
6	MJT-3240	ASSY REAR CYLINDER
7	MIT-3380	VR UNIT
8	MJT-3101	MECHA BASE
9	MJT-3102	RIDE FRAME
10	MJT-3 103	CRANK
11	MJT-3104	LINK
12	MJT-3105	GUIDE RING
13	Mm-3106	SHOULDER SCREW 18
14	MJT-3107	SHOULDER SCREW 22
15	MJT-3 108	SENSOR BRKT
16	MJT-3109	SENSOR BRKT BANK
17	GLC-3016	ROD SCREW
101	100-5025	BEARING UNIT
102	111-0019	ROD END 22 THK Pos 22
103	370-5071-01	BEAM SENSOR
104	601-6959	GEAR 64
105	370-5130	INCLINATION SENSOR
106	601-6843-30570	AIR TUBE 6-YELLOW-570
107	601-6843-40720	AIR TUBE 6-GREEN-720
108	601-6844-00400	AIR TUBE 10-CLEAR-400
109	60 I-6844-00540	AIR TUBE lo-CLEAR-540
110	601-6844-10540	AJR TUBE lo-RED-540
111	60 l-6844-20540	AIR TUBE lo-BLUE-540
112	601-6844-80850	AIR TUBE lo-BLACK-850
113	601-8898	AIR TUBE
114	280-5009	CORD CLAMP 2 1
115	280-5169	CORD CLAMP TL-20s
116	280-5275-SR10	CORD CLAMP SR10
117	280-5188-1N	WIRE SADDLE WS-IN NIKKO W$-1N
118	601-6844-80540	AIR TUBE IO-BLACK-540
119	601-6844-30580	AIR TUBE 10-YELLOW-580
120	601-6844-40720	AIR TUBE 10-GREEN-720
121	601-6844-10400	AJR TUBE lo-RED-400
122	601-6231-C135	EDGING NEW TYPE
123	601-5526-370	BUSH 1. 6T G-370
201	000-P00408-W	M SCR PH W/FS M4X8
202	000-P00420-W	M SCR PH W/FS M4X20
203	000-P00520-S	M SCR PH W/S M5X20
204	000-T00408-OB	M SCR TH BLK M4X8
205	030-001240	HEX BLT M 12X40
206	050-HO1000	HEX NUT M10
207	050-H01200	HEX NUT M12
208	050-H01400	HEX NUT M14
209	050-H01600	HEX NUT M16
210	060-F01000	FLT WSHR M10

ASSY MECHA BASE (MJT-3100)

ITEM NO.	PART NO.	DESCRIPTION
211	060-F01200	FLT WSHR M12
212	060-F01400	FLT WSHR M14
213	060-SO1000	SPR WSHR MI0
214	060-S01200	SPR WSHR MI2
215	060-501400	SPR WSHR MI4
216	060-S01600	SPR WSHR MI6
217	068-552016	FLT WSHR 5.5-20X1.6
218	FAS-500004	HEX NUT P1. 5 MI8
219	FAS-500005	HEX NUT P1. 5 #1 M22
220	FAS-600002	SPR WSHR MI8
221	FAS-600003	SPR WSHR M22
222	000-P00316-W	M SCR PH W/FS M3X16
223	050-H00300	HEX NUT M 3
224	028-A00412-P	SET SCR HEXSKT CUP P M4X12
225	000-PO0308	M SCR PH M3X8
226	000-P00412-W	M SCR PH W/FS M4X12
301	600-6790-068	WIRE HARN EXT INCLI SENSOR
302	600-6790-069	WIRE HARN EXT HANDLE VR
303	600-6790-070	WIRE HARN EXT START & VIEW B
304	600-6790-084	WIRE HARN EARTH REAR BASE
305	600-6790-085	WIRE HARN EARTH REAR RIDE
307	600-6790-049	WIRE HARN EXT SENSOR & SW
308	600-6790-050	WIRE HARN EXT START & VIEW A
309	600-6790-051	WIRE HARN EXT A/D REAR
310	600-6790-052	WIRE HARN EXT VALVE
311	600-6790-053	WIRE HARN EXT ETR
312	600-6790-054	WIRE HARN EXT COMP
313	600-6790-055	WIREHARNEXTREARFAN

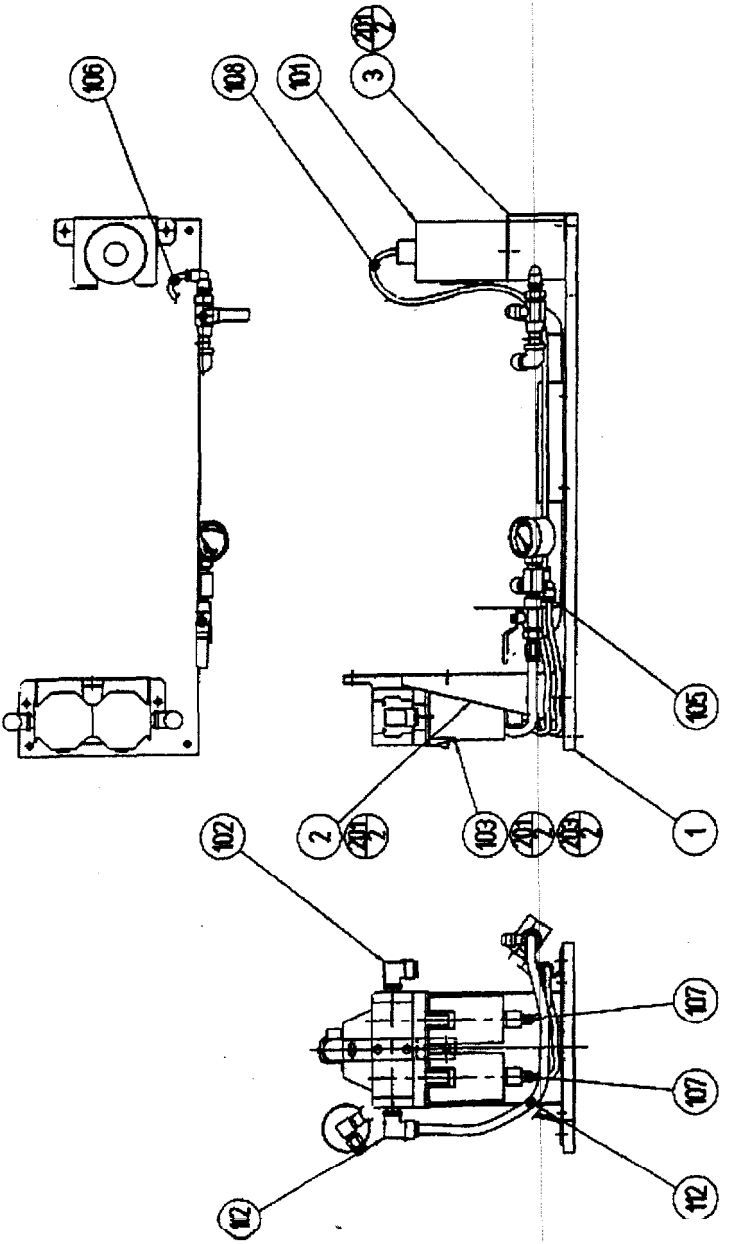
MECHA BASE (MJT-3101)



MECHA BASE (MJT-3101)

ITEM NO.	PART NO.	DESCRIPTION
101	601-5882	LEG ADJUSTER 0 60
102	601-6056-01	CASTER 0 50
201	050-H01600-3	HEX NUT TYPE 3 M16
202	030-000620-S	HEX BLT W/S M6X 20

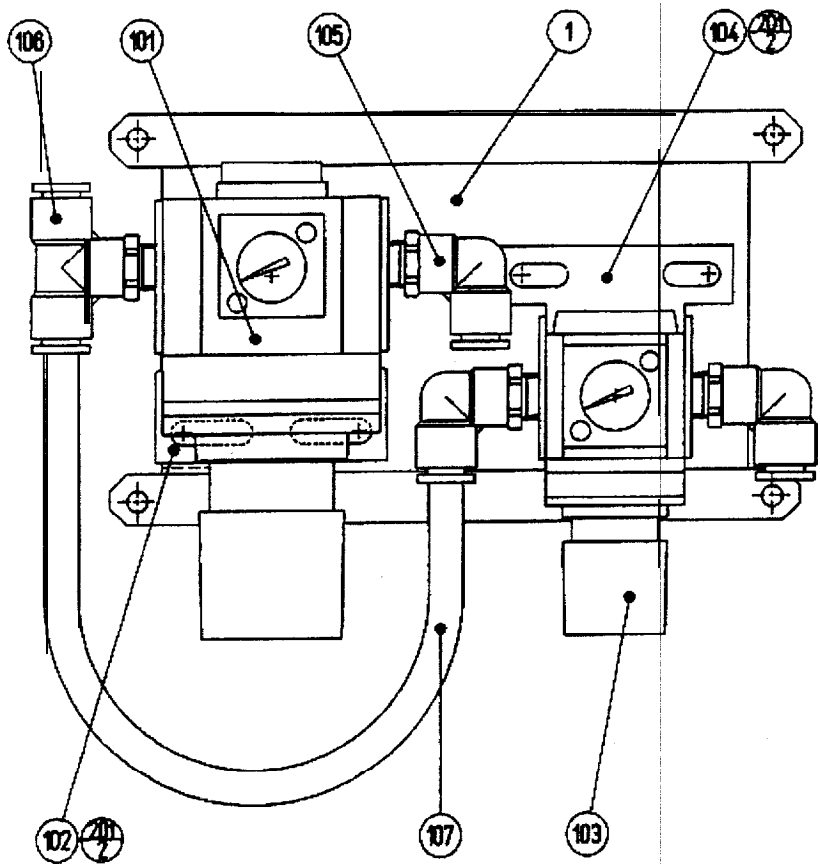
ASSY FILTER(MJTI-3160)



ASSY FILTER(MJT1-3160)

ITEM NO.	PART NO.	DESCRIPTION
	MJT-3161	TANK BASE
2	MJT-3162	FILTER BRKT
	MJT-3163	WATER TANK BRKT
101	253-5349	WATER TANK 500
102	601-6274	AIR JOINT
103	601-8850	AIR FILTER
105	601-6813	AIR JOINT W-TYPE
107	601-6843-40240	AIR TUBE 6-GREEN-240
108	601-6843-40720	AIR TUBE 6-GREEN-720
109	209-0023	CONN CLOSED END
110	280-5275-SR10	CORD CLAMP SR10
111	601-0460	PLASTIC TIE BELT 100MM
112	601-6844-00400	AIR TUBE 10-CLEAR-400
201	000-P00414-W	M SCR PH W/FS M4X 14
202	000-P00612-W	M SCR PH W/FS M6X 12
203	068-441616	FLT WSHR 4.4-16X1.6

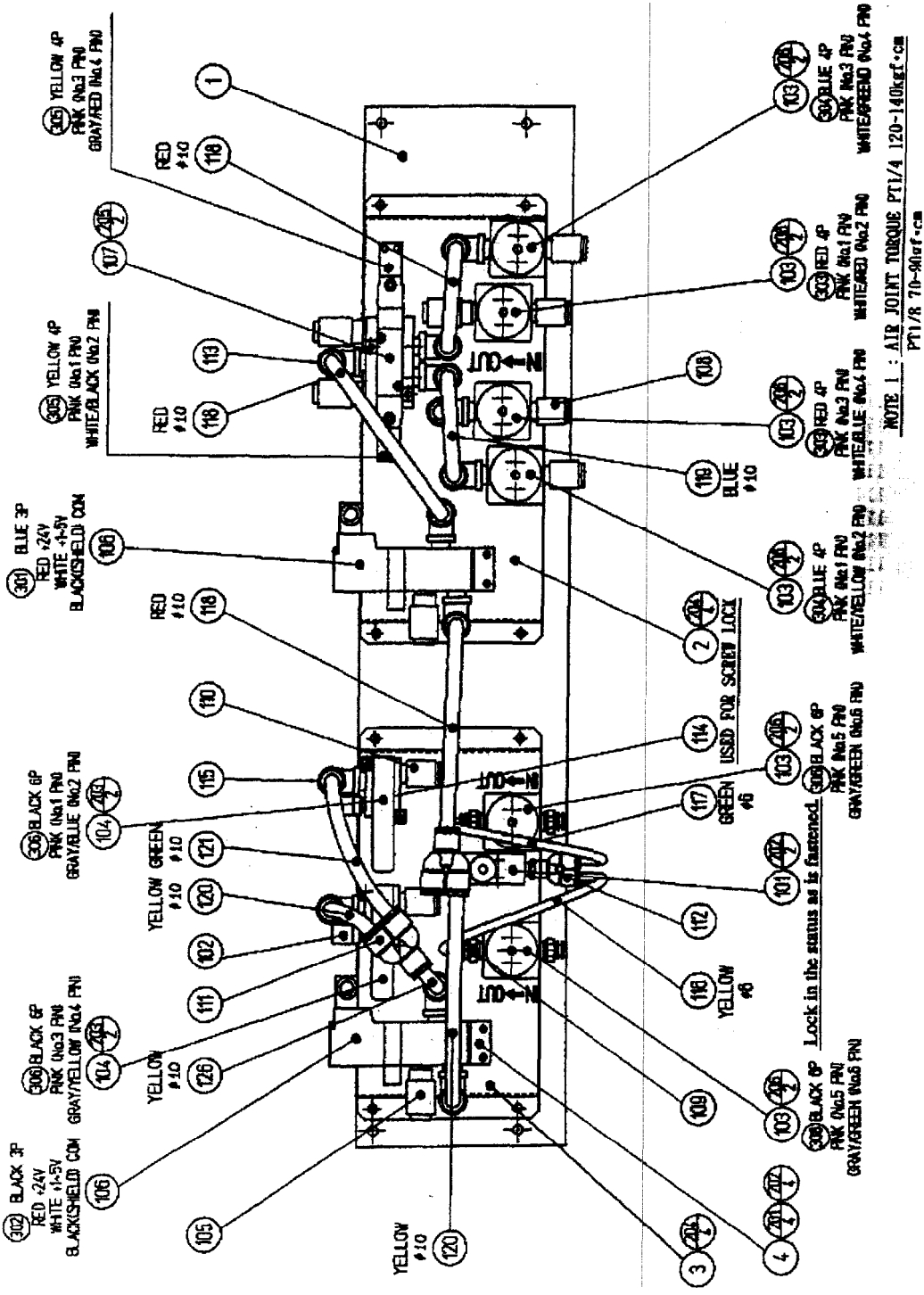
ASSY REGU (MJT-3180)



NOTE 1 : AIR JOINT TORQUE 120~140kgf•cm

ITEM NO.	PART NO.	DESCRIPTION	
1	MIT-3181	REGU BRKT	
101	601-6077	REGULATOR	
102	6014079	BRKT REGULATOR	
103	601-6933	REGULATOR R1000	
104	601-6934	BRKT REGULATOR C	TYPE120
105	601-6274	AIR JOINT	
106	601-6862	AIR JOINT T-TYPE ET	IC 1/4
107	60 1-6844-00200	AIR TUBE IO-CLEAR	
201	000-P004 10-w	M SCR PH W/FS M4 X	

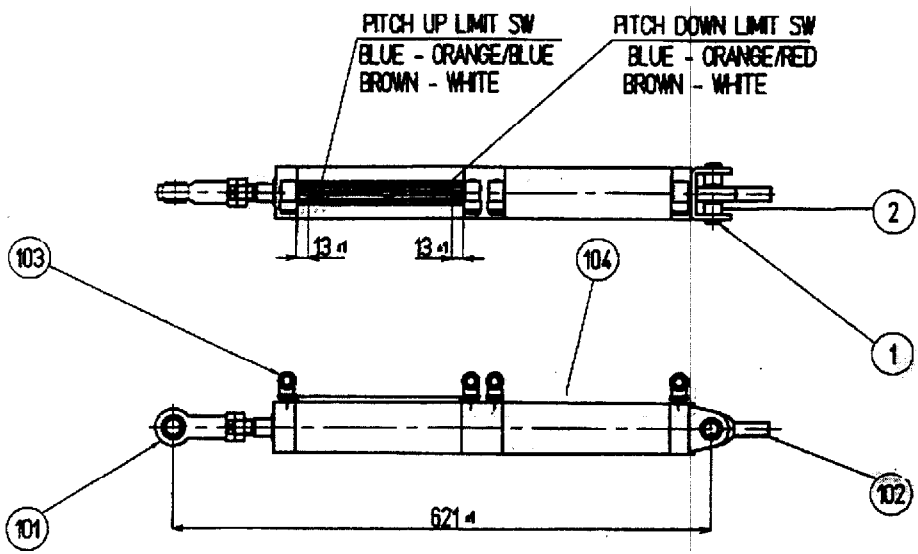
ASSY VALVE (MJT-3200)



ASSY VALVE (MJT-3200)

ITEM NO.	PART NO.	DESCRIPTION
1	MJT-3201	VALVE BASE
2	MJT-3202	VALVE BRKT F
3	MJT-3203	VALVE BRKT R
4	MJT-3204	REGU BRKT
101	601-6246	SPEED CONTROLER 1 /8
102	601-6247	SILENCER 1/8
103	601-6249	AIR VALVE 2 PORT
104	601-6251	AIR VALVE 4 PORT
105	601-6281	SILENCER 1/4
106	601-8848	AIR REGURATOR
107	601-8849	AIR VALVE 4 PORT
108	601-6083	AIR JOINT
109	601-6253	AIR JOINT
110	601-6254	AIR JOINT
111	601-6258	AIR JOINT
112	601-6260	AIR JOINT
113	601-6274	AIR JOINT
114	601-6719	PLUG 1/8
115	601-8855	AIR JOINT
116	601-6843-30260	AIR TUBE 6-YELLOW-260
117	601-6843-40260	AIR TUBE 6-GREEN-260
118	601-6844-I 0200	AIR TUBE 1 O-RED-ZOO
119	601-6844-20200	AIR TUBE 1 O-BLUE-200
120	601-6844-30200	AIR TUBE 1 O-YELLOW-ZOO
121	601-6844-40200	AIR TUBE 1 O-GREEN-200
122	209-0023	CONN CLOSED END
123	280-0419	HARNESSLUG
124	280-5009	CORD CLAMP 21
125	601-0460	PLASTIC TIE BELT 1 OOMM
126	601-6844-30120	AIR TUBE 1 O-YELLOW-I 20
201	000-P00308-S	M SCR PH W/S M3X8
202	000-P00408-S	M SCR PH W/S M4X8
203	ooo-PO04 12-s	M SCR PH W/S M4X 12
204	000-P00414-W	M SCR PH W/S M4X 14
205	000-P00430-S	M SCR PH W/S M4X30
206	ooo-PO05 1 o-s	M SCR PH W/S M5X10
301	600-6790-059	WIRE HARN ETR PITCH
302	600-6790-060	WIRE HARN ETR ROLL
303	600-6790-061	WIRE HARN VALVE RED
304	600-6790-062	WIRE HARN VALVE BLUE
305	600-6790-063	WIRE HARN VALVE YBLLOW
306	600-6790-064	WIRE HARN VALVE BLACK

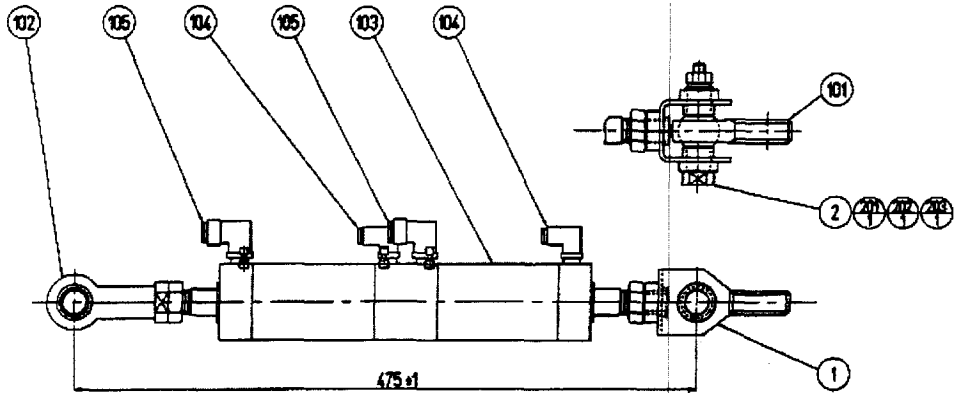
ASSY FRONT CYLINDER (MJT-3220)



NOTE 1 : M18 TORQUE 700kgf·cm
2 : AIR JOINT TORQUE 120~140kgf·cm

ITEM NO.	PART NO.	DESCRIPTION
1	MJT-322 1	PIN
2	MJT-3222	COLLAR
101	111-0026	ROD END PHS 18
102	111-0049	ROD END 16
103	601-6274	AIR JOINT
104	601-8852	AIR CYLINDER W4-50-150
105	209-0023	CONN CLOSED END
106	601-0460	PLASTIC TIE BELT 100MM
301	600-6790-056	WIRE HARN LIMIT SW

ASSY REAR CYLINDER (MJT-3240)

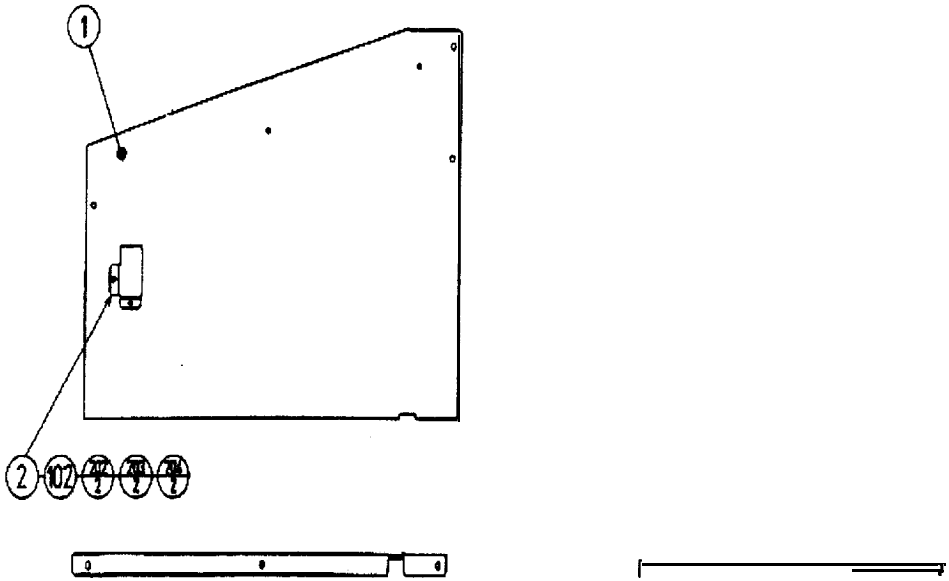


M10 TORQUE 260kgf·cm, M18 700kgf·cm
AIR JOINT TORQUE 120~140kgf·cm

Secure the Air Cushion Needle by unfastening 90 ± 5 degrees from the fully tightened position.

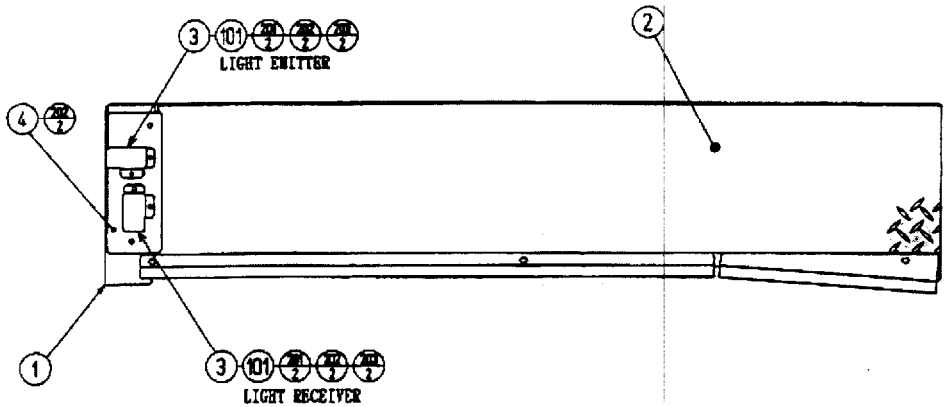
ITEM NO.	PART NO.	DESCRIPTION
1	MJT-3241	ROD END HOLDER
2	GLC-3016	ROD SCREW
101	111-0018	ROD END 18THK POS 18
102	Ill-0026	ROD END PHS 18
103	601-8853	AIR CYLINDER B 50-50-50
104	601-6715	AIR JOINT 6-1/4
105	601-6274	AIR JOINT
201	050-HO1000	HEX NUT M10 L TYPE
202	060-FO1000	FLT WSHR M10
203	060-SO1000	SPR WSHR Ml0

ASSY LID (MJT-3320)



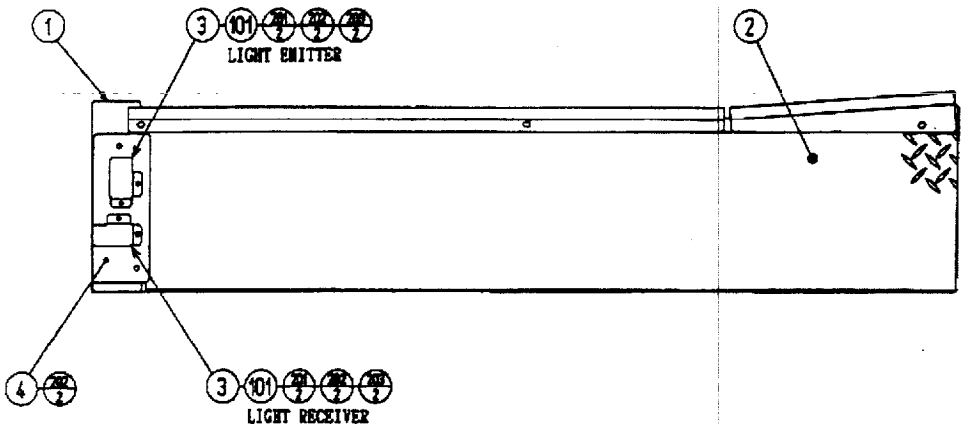
ITEM NO.	PART NO.	DESCRIPTION
1	MJT1-3321	LID
2	MJT-3343	SENSOR BRKT L
102	370-5071-02	BEAM SENSOR
104	280-5275-SR10	CORD CLAMP SR10
202	000-P00316-WB	M SCR PH W/FS BLK M3X 16
204	050-H00300	HEXNUTM3
301	600-6790-057	WIRE HARN EXT SENSOR

ASSY LID LEFT (MJT-3340)



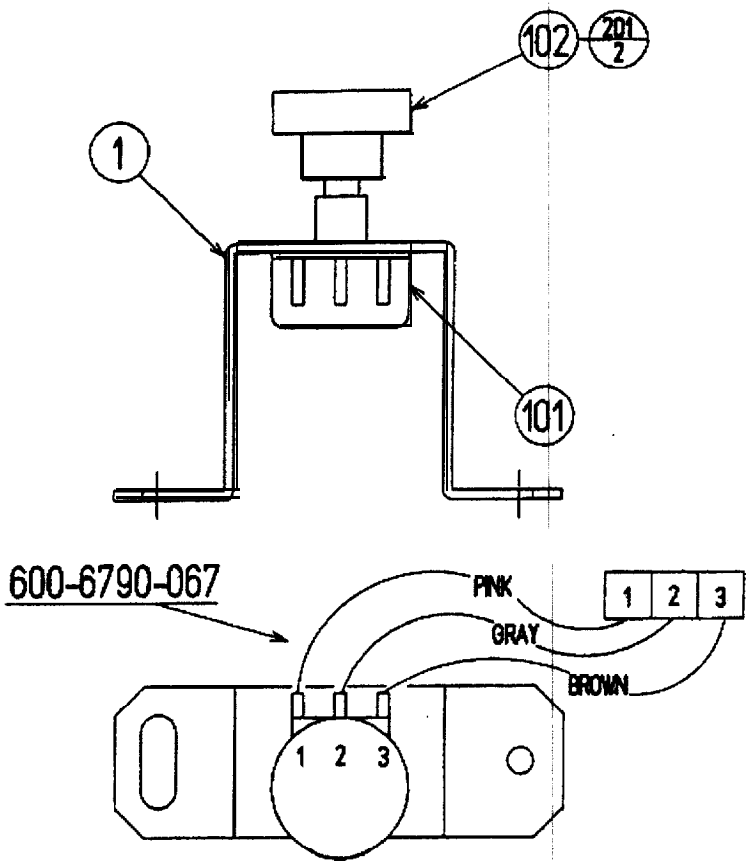
ITEM NO.	PART NO.	DESCRIPTION
	MIT-3341	LID LEFT
2	MI-I-3342	SIDE MAT
3	MJT-3343	SENSOR BRKT L
4	MIT-3344	SENSOR PLATE L
101	370-507 1	BEAM SENSOR
201	000-P00316-WB	M SCR PH W/FS BLK M3 X 16
202	000-T00408-OB	M SCR THBLK M4 X 8
203	050-H00300	HEX NUT M3

ASSY LID RIGHT (MJT-3360)



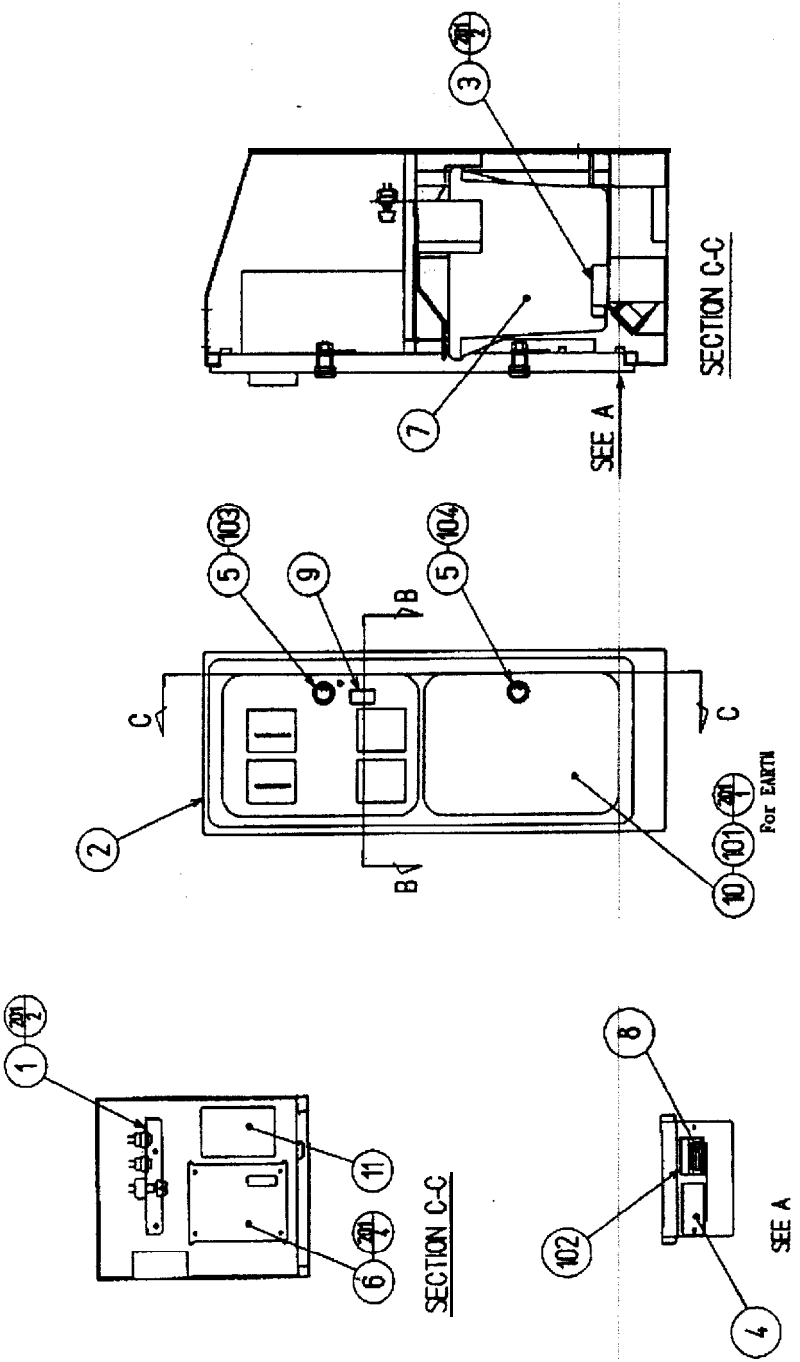
ITEM NO.	PART NO.	DESCRIPTION
1	MJT-3361	LID RIGHT
2	MJT-3342	SIDE MAT
3	MIT-3363	SENSOR BRKT R
4	MJT-3364	SENSOR PLATE R
101	370-5071	BEAM SENSOR
201	000-P00316-WB	M SCR PH W/FS BLK M3 X 16
202	000-T00408-OB	M SCR TH BLK M4 X 8
203	050-H00300	HEX NUTM3

VR UNIT (MJT-3380)



ITEM NO.	PART NO.	DESCRIPTION
1	MIT-3381	VR BRKT
101	220-5373	VOL CONT B-5K
102	601-6555	GEAR Z=30 M=0.75
103	310-5029-D20	SUMITUBE F D20MM
104	601-0460	PLASTIC TIE BELT 100MM
201	028-C00408-P	SET SCR CH CUP P M4X 8
301	600-6790-067	WIRE HARN PITCH VR

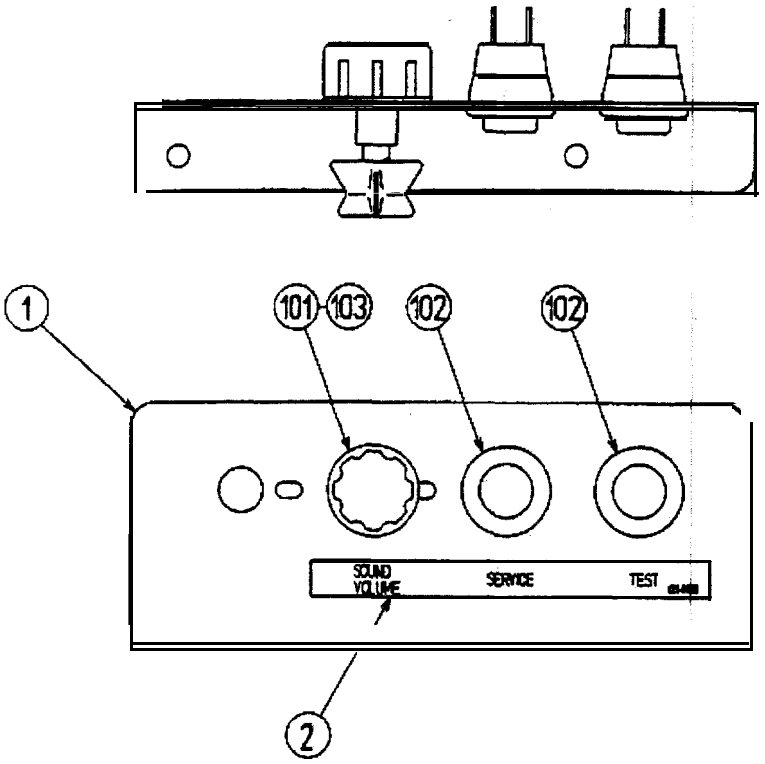
ASSY COIN CHUTE TOWER (MJT-3500)



ASSY COIN CHUTE TOWER (MJT-3500)

ITEM NO.	PART' NO.	DESCRIPTION
	MIT-3550	SW UNIT
2	MJT-3501	COIN CHUTE TOWER
3	IN-Y-1162	METER BRKT
4	INY-1163	METER HOLE LID
5	DP-1167	TNG LKG
6	105-5172	CHUTE PLATE DOUBLE
	105-5173	CHUTE PLATE MARS
	253-5366	CASH BOX
8	421-6591-01	STICKER COIN METER
10	421-7501-02	STICKER 6.3V 0.15A
11	440-WS0002XEG	STICKER W POWER OFF ENG
101	220-5128-01	ASSY COIN CHUTE 2DOOR USA 25
102	220-54 12	MAG CNTR W/CONN
	220-5217-01	MAG CNTR 6DIG DC 12V
103	220-5380	MAGNETIC LOCK MASTER W/O KEY
104	220-5046-91	MAGNETIC LOCK W/KEYS
105	280-5009	coRDCLAMP
106	280-5275-SR10	CORD CLAMP SR10
107	310-5029-F20	SUMITUBE FF 2oMM
108	601-0460	TIE BELT 100MM
201	000-P00408-W	M SCR PH W/FS M4 X 8
301	600-6455-01	WIRE HARN C.C DOOR TWIN
	600-6455-04	WIRE HARN MARS MS-111
302	600-6709-52	WIRE HARN EARTH 400MM
303	600-6709-54	WIRE HARN EART'H 150MM
304	600-6790-046	WIRE HARN COIN CHUTE TOWER
305	600-6790-047	WIRE HARN EXT SOUND VR TOWER
306	600-6790-048	WIRE HARN DC12V TOWER
307	600-6790-083	WIRE HARN EARTH TOWER
	HN-1050	SPACER RING
	109-0045-91	KEY HOLDER
	105-5201	MAGNETIC LOCK BRKT FOR ASAHI
	220-54 12	MAG CNTR W/CONN BLK
	000-P00308-W	M SCR PH W/FS M3X8
	280-5008	CORD CLAMP 0 15
	m-6455-06	WIRE HARN METER GND WH

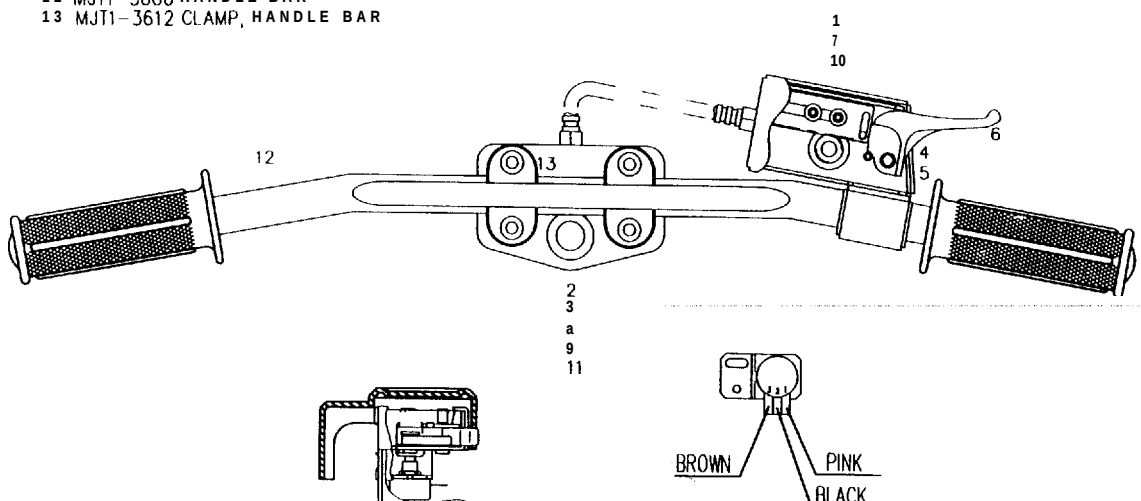
SWITCH UNIT (MJT-3550)



ITEM NO.	PART NO.	DESCRIPTION
	NY-1181	SW BRKT
2	421-8126	STICKER SWITCH PANEL
101	220-S 179	VOL CENT B-5K OHM
102	509-5028	SW PB IM
103	601-0042	KNOB22 MM
104	310-5029-D20	SUMITUBE E D20 MM
105	601-0460	PLASTIC TIE BELT 100MM
301	600-6609-32	WIRE HARN TEST &
302	600-6609-33	WIRE HARN VOLUME

REVISION			
REV	DESCRIPTION	DATE	APPROVAL
3	REDRAWN	12-16-96	G.L

1 MJTT-00790 SPACER, TRIGGER, ACCELERATOR
2 MJTT-00791 WASHER, HEAVY DUTY, Ø10M, GOOSE NECK (SPACER)
3 MJTT-00792 COVER, HANDLE EAR CLAMPS
4 MJTT-00801 BEARING. THROTTLE, TRIGGER
5 MJTT-00802 COLLAR, BEARING. ALUMINUM
6 MJTT-00803 TRIGGER, MODIFIED (PEG MOD)
7 MJTT-00808 SPRING, LE-026C-5
8 MJIT-00809 BOLT, HEX. M10x30
9 MJT1-3006 SLIDE PLATE
10 MJT1-3602 RACK, POT, THROTTLE
11 MJT1-3603 MOUNT BLOCK
12 MJT1-3606 HANDLE BAR
13 MJT1-3612 CLAMP, HANDLE BAR

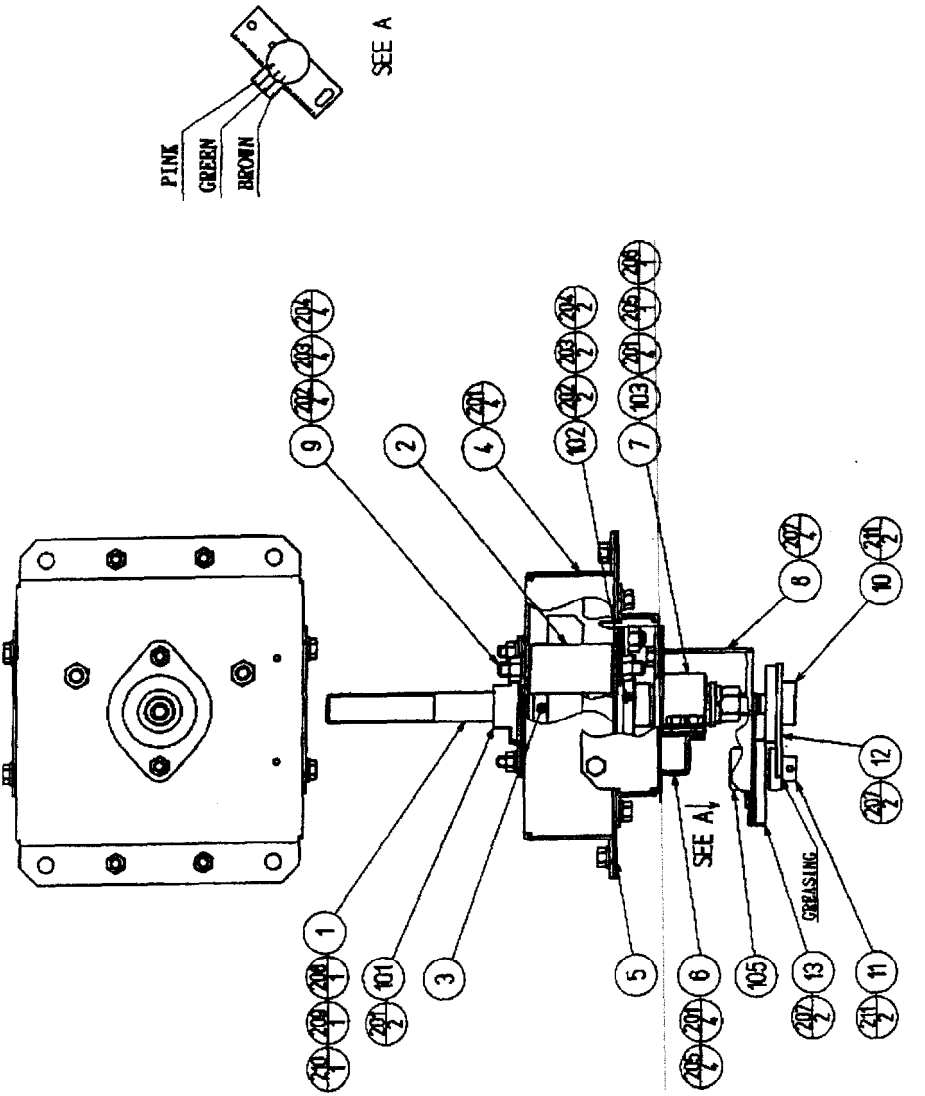


DRAWN BY: JERRY LICHAC	SEGA 45133 Industrial Drive Fremont, CA 94538		
APPROVED: G.L			
CHECKED: G.L DATE: 11-22-96	TITLE: ASSY, HANDLE BAR		
FINISH:			
USED ON: WAVERUNNER	SIZE: A	DRAWING NO.: MJT1-3600	REV: 3
	DO NOT SCALE		

ASSY HANDLE MECHA (MJT-3600)

ITEM NO. NOTE	PART NO.	DESCRIPTION
4	MJT-3604	ACCEL COVER A
5	MJT-3605	ACCEL COVER B
7	MIT-3607	TORSION SPRING
10	MIT-3610	VR BRKT
11	107-0009-L	HANDLE GRIP
13	601-7945	GEAR 20
101	2205373	VOL CON-T B-5K
102	310-5029-F20	SUMITUBE FF 20 MM
103	280-5275-SR10	CORD CLAMP
201	028-A00308-P	SET SCR HEX SKT CUP P M3X8
202	065-E00400	E RING 4MM
203	000-T00408-OB	M SCR TH BLK M4X8
204	000-T00308-WB	M SCR PH W/FS BLK M3X8
205	050-F00400	FLG NUT M4
206	068-552016-OB	FLT WSHR BLK 5.5-20 X 1.6
207	000-T00525-OB	M SCR TH BLK M5X25
208	020-000620-0Z	HEX SKT H CAP SCR BLK OZ M6X20
209	060-S00600-OB	SPR WSHR BLK
210	060-F00600-OB	FLT WSHR BLK M6
211	068-441616-OB	FLT WSHR BLK 4.4-16X1.6
212	000-T00406-OB	M SCR TH BLK M4X6
301	600-6790-074	WIRE HARN ACCEL VR
302	600-6790-098	WIREHARNEXTACCELVRE UP
	600-6790-096	WIRE HARN EXT EMERGENCY S W
	600-6790-097	WIRE HARN EMERGENCY SW
	509-5329	PUSH BUTTON SW IT RED
	000-T00408-OB	M SCR TH BLK M4X8
	MJT-3609-E	STICKER EMERGENCY

ASSY CENTERING MECHA (MJT-3650)



ASSY CENTERING MECHA (MJT-3650)

ITEM NO.	PART NO.	DESCRIPTION
	MIT-3651	MAIN SHAFT
2	MIT-3652	STOPPER
3	MJT-3653	COLLAR B
4	MJT-3654	MECHA CASE A
5	MJT-3655	MECHA CASB B
6	MJT-3656	ROSTA HOLDER
7	MIT-3657	HOLDER
8	MJT-3658	HOLDER
9	MJT-3659	SHAFT
10	l-m-2010	GEAR HOLDER 110
11	601-6555	GEAR Z=30 M=O. 75
12	601-6450	GEAR 110
13	RDY-2106	BRACKET
101	100-5096	BEARING 17
102	loo-5043	BEARING 25 FYH SBP FL 205
103	601-8847	ROSTA DR-S-18x30
104	310-5029-F20	SUMITUBE FF 20MM
105	220-5373	VOL CONT B-SK
	220-5484	VOL CONT B-5K OHM
106	280-5275-SR10	CORD CLAMP SR10
201	050-F00600	FLG NUT M6
202	060-F00800	FLT WSHR M8
203	060-S00800	SPR WSHR M8
204	050-H00800	HEX NUT M8
205	030-000612-S	HEX BLT W/S M6X12
206	060-F00600	FLT WSHR M6
207	000-P00408-W	M SCR PH W/FS M4X8
208	060-F01200	FLT WSHR M12
209	060-S01200	SPR WSHR M12
210	050-H01200	HEXNUTM12
211	028-A00410-P	SET SCR HEX SKT CUP P M4X10
301	600-6790-072	WIRE HARN STEERING VR

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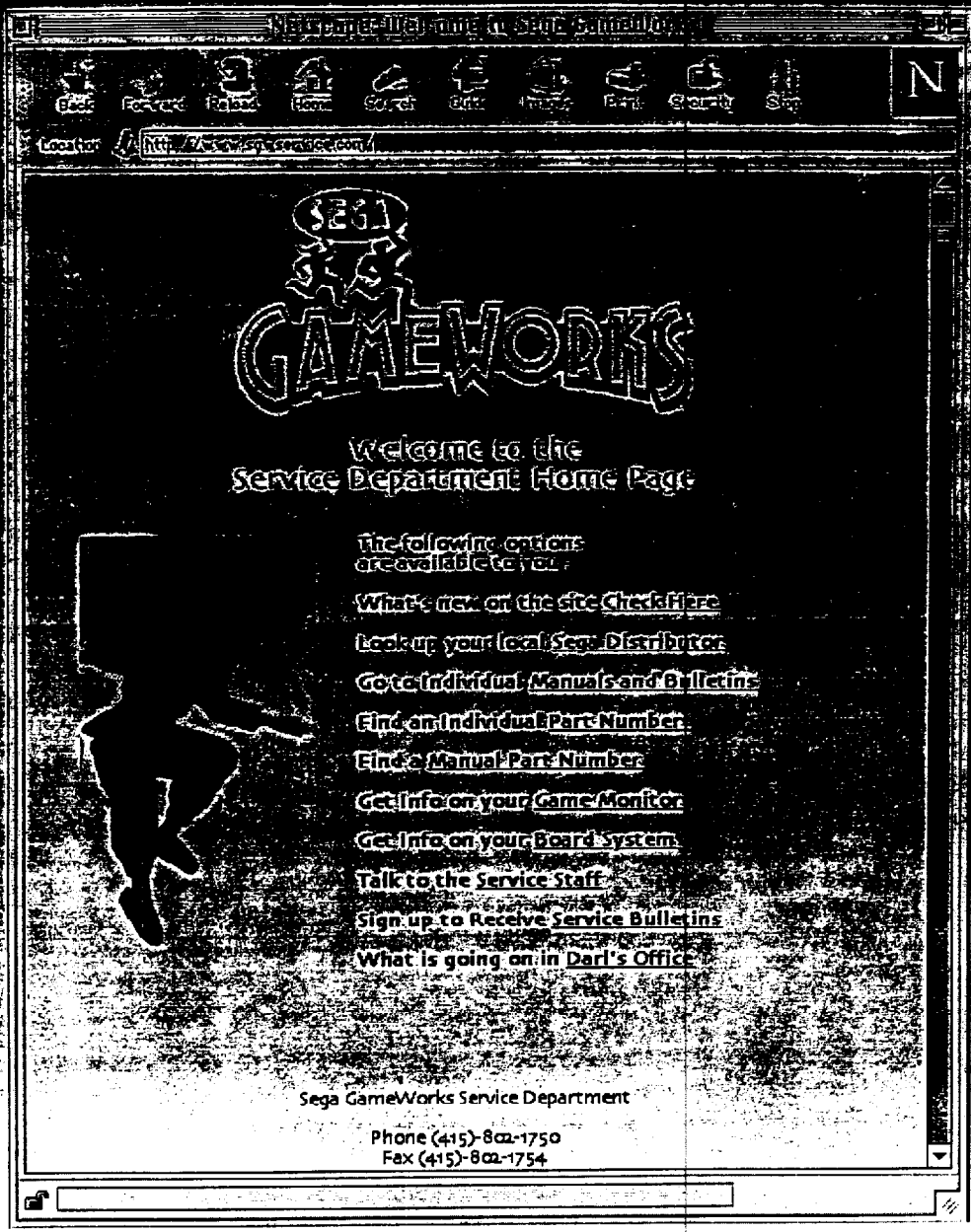
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WAVE RUNNER DELUXE MANUAL COMMENTS

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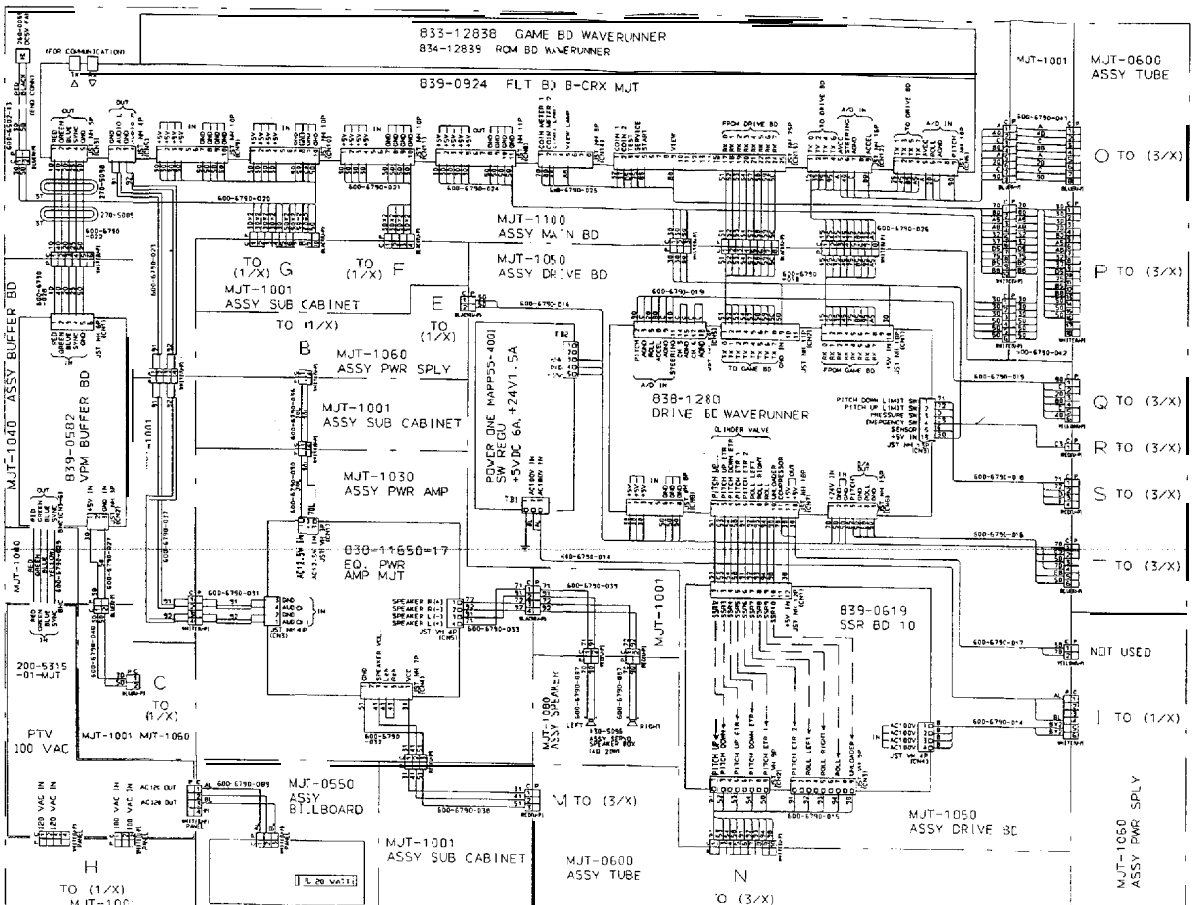
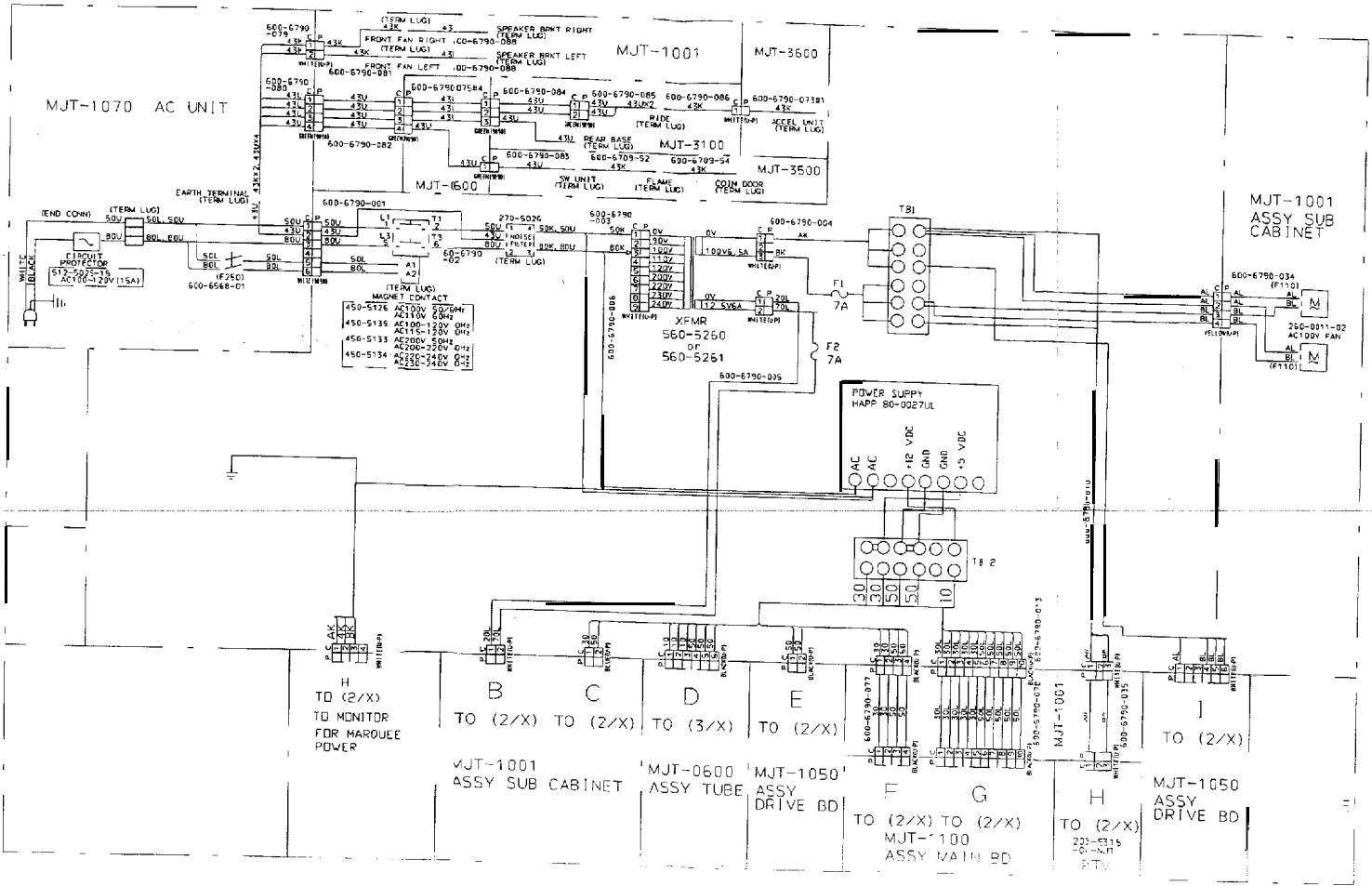

833-12838 GAME BD WAVERUNNER
834-12839 ROM BD WAVERUNNER
839-0924 FLT BD B-CRX MJT
MJT-1001
MJT-0600
ASSY TUBE
O TO (3/X)
P TO (3/X)
Q TO (3/X)
R TO (3/X)
S TO (3/X)
T TO (3/X)
NOT USED
TO (1/X)
M TO (3/X)
N TO (3/X)
MJT-1100
ASSY MAIN BD
MJT-1050
ASSY DRIVE BD
MJT-1001
ASSY SUB CABINET
MJT-1060
ASSY PWR SPLY
MJT-1030
ASSY PWR AMP
838-1280
DRIVE BD WAVERUNNER
POWER ONE MAP53-4001
SW REGU +5VDC 6A, +24V1.5A
839-0582
VPM BUFFER BD
MJT-1040 ASSY BUFFER BD
838-11650-17
EQ. PWR
AMP MJT
839-0619
SSR BD 10
MJT-1080
ASSY SPEAKER
MJT-0550
ASSY
BILLBOARD
MJT-1001
ASSY SUB CABINET
MJT-0600
ASSY TUBE
MJT-1050
ASSY DRIVE BD
MJT-1050
ASSY PWR SPLY
PTV
100 VAC
200-5315
-01-MJT
TO (1/X) G
TO (1/X) F
TO (1/X) E
TO (1/X) C
TO (1/X) H
MJT-100
B
MJT-1001 MJT-1060
MJT-1001 MJT-1050
MJT-1046
FOR COMMUNICATION


MJT-1070 AC UNIT
MJT-1001
MJT-3600
MJT-3100
MJT-3500
MJT-1600
MJT-1001 ASSY SUB CABINET
600-6790-079
600-6790-080
600-6790-081
600-6790-082
600-6790-083
600-6790-084
600-6790-085
600-6790-086
600-6790-087
600-6790-088
600-6790-001
600-6790-003
600-6790-004
600-6790-005
600-6790-006
600-6790-034
600-6790-035
600-6790-052
600-6790-054
600-6790-077
600-6790-078
600-6790-079
FRONT FAN RIGHT
FRONT FAN LEFT
SPEAKER BRKT RIGHT
SPEAKER BRKT LEFT
REAR BASE
RIDE
ACCEL UNIT
SW UNIT
FLAME
COIN DOOR
EARTH TERMINAL
CIRCUIT PROTECTOR
512-5027-15
AC100-120V (15A)
600-6568-01
(F250)
MAGNET CONTACT
450-5126 AC100V 50/60Hz
450-5135 AC110V 60Hz
450-5133 AC200V 50Hz
450-5134 AC220-240V 50Hz
270-5026
XFMR
560-5260
or
560-5261
T1
T2
T3
T4
T81
F1
7A
F2
7A
100V6.5A
12 5V6A
POWER SUPPY
HAPP 80-0027UL
AC
AC
+12 VDC
GND
GND
+5 VDC
TB 2
30
30
50
50
10
MJT-1001 ASSY SUB CABINET
250-6011-02
AC100V FAN
(F110)
H
TO (2/X)
TO MONITOR
FOR MARQUEE
POWER
B
TO (2/X)
C
TO (2/X)
D
TO (3/X)
E
TO (2/X)
MJT-0600
ASSY TUBE
MJT-1050
ASSY
DRIVE BD
F
TO (2/X)
G
TO (2/X)
MJT-1100
ASSY MAIN BD
H
TO (2/X)
MJT-1050
ASSY
DRIVE BD
I
TO (2/X)